Rulemaking Hearing Rules

of

Department of Environment and Conservation

Division of Solid Waste Management

Chapter 1200-01-11

Hazardous Waste Management

Amendments

Rules 1200-01-11-.01 through .12 of Rule Chapter 1200-01-11 Hazardous Waste Management are amended by deleting them in their entirety and substituting the following to read as follows:

1200-01-11-.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 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.

"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 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 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(33) and 1200-01-11-.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.

"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; 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 or paragraph (6) of Rule 1200-01-11-.09; and

   (iv) Has been designated on the manifest by the generator pursuant to subparagraph (3)(a) of Rule 1200-01-11-.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 or Rule 1200-01-11-.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. 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(3)(c), or they are listed in Rule 1200-01-11-.02(4) only for this reason; and

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

"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(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(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(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(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.

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

"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 and 1200-01-11-.06 are no longer conducted at the facility unless subject to the provisions in Rule 1200-01-11-.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”.

"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 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(1)(c).

"Hazardous waste code" means the code assigned by the Department to each hazardous waste listed in Rule 1200-01-11-.02(4) and to each characteristic identified in Rule 1200-01-11-.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(4), or a constituent listed in Table 1 of Rule 1200-01-11-.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.

"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(53) and at Rule 1200-01-11-.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.

"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.

"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(9)(a) and the applicable requirements of Rules 1200-01-11-.03 through 1200-01-11-.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(1)(g), or staging pile.

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

"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. (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(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.")

"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 and 1200-01-11-.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.

“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 or 1200-01-11-.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.

"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. 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.

"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 1200-01-11-.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(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.

"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(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(22)(e).

"State" means the State of Tennessee.

"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".)

“Thermostat” means a temperature control device that contains metallic mercury in an ampule attached to a bimetal sensing element, and mercury-containing ampules that have been removed from these temperature control devices in compliance with the requirements of Rule 1200-01-11-.12(2)(d)3(ii) or (3)(d)3(ii).

"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(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.

"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(1)(a) that are managed under the universal waste requirements of Rule 1200-01-11-.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(2)(d)1 or 3, or Rule 1200-01-11-.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 waste as defined in Rule 1200-01-11-.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(1)(c) or generates and accumulates a wastewater treatment sludge which is a hazardous waste as defined in Rule 1200-01-11-.02(1)(c), or treats or stores a wastewater treatment sludge which is a hazardous waste as defined in Rule 1200-01-11-.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 these in 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 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 may petition for a regulatory amendment under this subparagraph, subparagraph (a) of this paragraph, and Rule 1200-01-11-.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: 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(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(7)(b). The decision will be based on the weight of evidence showing that regulation under Rule 1200-01-11-.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(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(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(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(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(1)(f)1(ii)(III) should be regulated under Rule 1200-01-11-.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 1200-01-11-.01(6)(b).

(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(1)(f)1(ii)(III) under the provisions of Rule 1200-01-11-.02(1)(f)2 and 3, rather than under the provisions of Rule 1200-01-11-.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. 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(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 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. 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(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 1200-01-11-.01(7)(a)2(viii)(I)-(IV) 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,.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.

Authority: T.C.A. §§4-5-202 and 68-212-101 et seq.

1200-01-11-.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 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 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(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(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(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(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(1)(b)3(i))	Energy recovery/fuel (Rule 1200-01-11-.02(1)(b)3(ii))	Reclamation (Rule 1200-01-11-.02(1)(b)3(iii)) (except as provided in Rule 1200-01-11-.02(1)(d)1(xix) for mineral processing secondary materials	Speculative accumulation (Rule 1200-01-11-.02(1)(b)3(iv))
	(1)	(2)	(3)	(4)
Spent Materials	(*)	(*)	(*)	(*)
Sludges [listed in Rule 1200-01-11-.02(4)(b) or (c)]	(*)	(*)	(*)	(*)
Sludges exhibiting a characteristic of hazardous waste	(*)	(*)	_	(*)
By-products [listed in Rule 1200-01-11-.02(4)(b) or (c)]	(*)	(*)	(*)	(*)
By-products exhibiting a characteristic of hazardous waste	(*)	(*)	_	(*)
Commercial chemical products listed in Rule 1200-01-11-.02(4)(d)	(*)	(*)	–	_
Scrap metal other than excluded scrap metal (see Rule 1200-01-11-.02(1)(a)3(ix))	(*)	(*)	(*)	(*)

(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 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(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(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(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(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(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(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(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(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, 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(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 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 through .07, .09 and .10:

(i) Hazardous debris as defined in Rule 1200-01-11-.10 that has been treated using one of the required extraction or destruction technologies specified in Table 1 of Rule 1200-01-11-.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 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 1200-01-11-.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(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(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 ("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 must meet the eligibility criteria and specified conditions in part (14)(b)6 of Rule 1200-01-11-.09 and part (14)(b)11 of Rule 1200-01-11-.09 (for storage and treatment) and in part (14)(m)1 of Rule 1200-01-11-.09 and part (14)(n)1 of Rule 1200-01-11-.09 (for transporation 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(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, 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(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).

(Note: Any management of petroleum tank bottom waters or their residues by the generator, transporter, or processor/re-refiner will void this exclusion and will render these materials fully subject to a hazardous waste determination and management as appropriate.)

(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).

(Note: Any management of petroleum tank bottom waters or their residues by the generator, transporter, or processor/re-refiner will void this exclusion and will render these materials fully subject to a hazardous waste determination and management as appropriate.)

(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(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(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(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 and .06.

(xxiii) 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).

(II) 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.

(III) 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(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(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(2)(a) are not solid wastes provided that they meet the requirement 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, 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(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.

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

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.

(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 $Ti0_2$ 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(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) 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(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 <u>in situ</u> 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.. Slag from primary copper processing;

B. Slag from primary lead processing;

C. Red and brown muds from bauxite refining;

D. Phosphogypsum from phosphoric acid production;

E. Slag from elemental phosphorus production;

F. Gasifier ash from coal gasification;

G. Process wastewater from coal gasification;

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

I. Slag tailings from primary copper processing;

J. Fluorogypsum from hydrofluoric acid production;

K. Process wastewater from hydrofluoric acid production;

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

M. Iron blast furnace slag;

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

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

P. Process wastewater from phosphoric acid production;

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

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

S. Chloride process waste solids from titanium tetrachloride production;

T. 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(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(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(2)(a)2. Such a waste shall also be subject to the annual reporting requirements of Rule 1200-01-11-.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(2)(a), are not subject to any requirement of Rule 1200-01-11-.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(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, 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 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, 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(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; or

   (v) Is spent lead-acid batteries managed under the requirements of Rule 1200-01-11-.09(7); or

   (vi) Is universal waste managed under Rule 1200-01-11-.02(1)(j) and Rule 1200-01-11-.12; or

   (vii) 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:

   (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 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, the generator must comply with the following requirements:

(i) The generator must perform the hazardous waste determination of Rule 1200-01-11-.03(1)(b) and keep records thereof as required by Rule 1200-01-11-.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 1200-01-11. The time period of Rule 1200-01-11-.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;

(II) In interim status under Rule 1200-01-11-.05 and 1200-01-11-.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, a universal waste handler or destination facility subject to the requirements of Rule 1200-01-11-.12.

7. In order for hazardous waste generated by a conditionally exempt small quantity generator in quantities of less than 100 kilograms 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(1)(b) and keep records thereof as required by Rule 1200-01-11-.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 applicable to generators of between 100 kg and 1000 kg of hazardous waste in a calendar month as well as the requirements of Rule 1200-01-11-.04 through 1200-01-11-.10. The time period of Rule 1200-01-11-.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;

(II) In interim status under Rules 1200-01-11-.05 and 1200-01-11-.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, a universal waste handler or destination facility subject to the requirements of Rule 1200-01-11-.12.

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. Any material produced from such a mixture by processing, blending, or other treatment is also so regulated.

(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) of Rule 1200-01-11-.09 and all applicable provisions in Rule 1200-01-11-.07:

(I) Recyclable materials used in a manner constituting disposal (Rule 1200-01-11-.09(3);

(II) Hazardous wastes burned for energy recovery in boilers and industrial furnaces that are not regulated under paragraph (15) of Rule 1200-01-11-.05 or Rule 1200-01-11-.06, (Rule 1200-01-11-.09(8));

(III) Recyclable materials from which precious metals are reclaimed (Rule 1200-01-11-.09(6));

(IV) Spent lead-acid batteries that are being reclaimed (Rule 1200-01-11-.09(7).

(iii) The following recyclable materials are not subject to regulation under Rule Chapter 1200-01-11:

(I) Industrial ethyl alcohol that is reclaimed except that, unless provided otherwise in an international agreement as specified in Rule 1200-01-11-.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(6)(d), (g)1(i)-(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(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(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(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(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(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 through .06, .09, and .10, but is regulated under Rule 1200-01-11-.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 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 and paragraphs (1) through (12), (30), (31) and (32) of Rule 1200-01-11-.06, and under Rules 1200-01-11-.07, .09, and .10, and the notification requirements under Rule 1200-01-11-.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(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(5)(b) and (c) (dealing with the use of the manifest and manifest discrepancies);

(III) Rule 1200-01-11-.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 and paragraphs (30) and (31) of Rule 1200-01-11-.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)(c), 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)(c), 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 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(1)(a) are exempt from regulation under Rules 1200-01-11-.03 through .07, .09 and .10 except as specified in Rule 1200-01-11-.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(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(2) and all applicable recordkeeping and reporting requirements under Rules 1200-01-11-.03 through .07 and Rule 1200-01-11-.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.

(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(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(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(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(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(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, or a Class A explosive as defined in 49 CFR 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(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(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(2) and certain recordkeeping and reporting requirements under Rules 1200-01-11-.03 through .07 and Rules 1200-01-11-.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(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.	(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 oil 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	(T)

	Rule, if those residuals are to be disposed of.	
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 .02(1)(d)1(xii)(I), 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.

(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(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.	(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(14)(b) or Rule 1200-01-11-.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 (14)(b), or Rule 1200-01-11-.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)-(e) of paragraph (3) of this Rule and subparagraphs (b)-(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 lising, 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 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.

(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 supart 4 (iii) of this subparagraph 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 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 and keep the records described in item 4 (ii)(II) of this subparagraph. For determinations based on sampling and analysis, the generator must comply with the sampling and analysis and recordkeeping requirements described below in this subparagraph.

(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(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	[1]81-81-2	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	[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	[1]94-75-7	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	[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	[1]94-75-7	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	[1]81-07-2	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:

(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(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 [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"

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)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	
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			
Pentachlorodibenzofuran s			
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	117-81-7	ND		2400	
phthalate]	85-68-7	ND		2400	
Butyl benzyl phthalate	95-48-7	ND		2400	
o-Cresol [2-Methyl phenol]					
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 ND	57 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	71-55-6	ND		ND	39

chloroform]	79-00-5	ND		ND	39
1,1,2-Trichloroethane [Vinyl trichloride]	79-01-6	ND		ND	39
Trichloroethylene					
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(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(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 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(2)(a);

(II) Boilers, as defined in Rule 1200-01-11-.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(15) or Rule 1200-01-11-.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 and .06, or Rule 1200-01-11-.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 and .06, or Rule 1200-01-11-.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 and .06, or Rule 1200-01-11-.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(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(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).

(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;

III. 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(3) instead of the requirements of this subparagraph.

(v) Exports

[Note: The implementation of this subpart (Rule 1200-01-11-.02(6)(b)1(v) Exports) remains the responsibility of EPA.]

In addition to the applicable conditions specified in subparts (i)-(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 1200-01-11-.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(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(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 1200-01-11-.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 1200-01-11-.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. §§4-5-202 and 68-212-101 et seq.

1200-01-11-.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(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 (1)(b) 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(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, .06, .07, .09 and .10.)

4. (Reserved) [40 CFR 262.10(d)]

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(1)(d)2(ii)(II) is not required to comply with other standards in this Rule or Rules 1200-01-11-.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 is subject to the compliance requirements and penalties prescribed in T.C.A. Sections 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(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(1)(e).

10. Persons responding to an explosives or munitions emergency in accordance with Rule 1200-01-11-.05(1)(b)2(vii)(I)IV or (IV) or Rule 1200-01-11-.06(1)(b)2(vii)(I)IV

or (IV) and Rule 1200-01-11-.07(1)(b)5(i)(IV) or (iii) are not required to comply with the standards of this Rule.

(b) Hazardous Waste Determination [40 CFR 262.11]

A person who generates a solid waste, as defined in Rule 1200-01-11-.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(1)(d).

2. He must then determine if the waste is listed as a hazardous waste in Rule 1200-01-11-.02(4).

(Note: Even if the waste is listed, the generator still has an opportunity under Rule 1200-01-11-.01(3)(c) to demonstrate to the Commissioner 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, or if the waste is not listed in Rule 1200-01-11-.02(4), the generator must then determine whether the waste is identified in Rule 1200-01-11-.02(3) by either:

   (i) Testing the waste according to the methods set forth in Rule 1200-01-11-.02, or according to an equivalent method approved by the Commissioner under Rule 1200-01-11-.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, .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 1200-01-11-.03(2)(a)2 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(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(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(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(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(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, then the generator must notify with regard to that waste stream and file an annual report in accordance with Rule 1200-01-11-.03(5)(b).

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 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 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 1200-01-11-.03(9)(a).

(ii) The revised Manifest form and procedures in subparagraph (2)(a) of Rule 1200-01-11-.01, subparagraph (1)(g) of Rule 1200-01-11-.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 1200-01-11-.03, 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(1)(a)1, the generator or transporter must comply with the requirements for transporters set forth in Rule 1200-01-11-.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 effective September 5, 2006.

(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 1200-01-11-.03(9)(a), 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.

(Note: See Rule 1200-01-11-.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 (as those Federal regulations exist on the effective date of these Rules).

(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 (as those Federal regulations exist on the effective date of these Rules).

(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 (as those Federal regulations exist on the effective date of these Rules).

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 (as those Federal regulations exist on the effective date of these Rules):

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 as those Federal regulations exist on the effective date of these Rules.

(e) Accumulation Time

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(9), (27), (28), and (29), and/or

(II) In tanks and the generator complies with the applicable requirements of Rules 1200-01-11-.05(10), (27), (28), and (29), except Rules 1200-.05(10)(h)3 and .05(10)(k); and/or

(III) On drip pads and the generator complies with Rule 1200-01-11-.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(30), has placed its professional engineer certification that the building complies with the design standards specified in Rule 1200-01-11-.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, 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 and with subpart (1)(g)1(v) of Rule 1200-01-11-.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 who accumulates 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 and 1200-01-11-.06 and the permit requirements of Rule 1200-01-11-.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(4)(b), (c) or (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(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(4)(b), (c), or (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(9), except for Rules 1200-01-11-.05(9)(g) and .05(9)(i);

(iii) The generator complies with the requirements of Rule 1200-01-11-.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, and with subpart (1)(g)1(v) of Rule 1200-01-11-.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, 1200-01-11-.06, and 1200-01-11-.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; 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, except part (10)(h)3 and subparagraph (10)(k) of Rule 1200-01-11-.05; and/or

III. In containment buildings and the generator complies with paragraph (30) of Rule 1200-01-11-.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 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, except for subparagraphs (7)(b) and (7)(e) of Rule 1200-01-11-.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, with subparagraph (2)(g) of Rule 1200-01-11-.05, and with subpart (1)(g)1(v) of Rule 1200-01-11-.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 and 1200-01-11-.06 and the permit requirements of Rule 1200-01-11-.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 and/or 1200-01-11-.06, then he must manage such accumulated wastes fully in accordance with those applicable requirements of Rules 1200-01-11-.05 and/or 1200-01-11-.06.

13. A member of the EPA Performance Track Program who generates 1000 kg or greater of hazardous waste per month (or one kilogram or more of acute hazardous waste) may accumulate hazardous waste on-site without a permit or interim status for an extended period of time, provided that:

(i) The generator accumulates the hazardous waste for no more than 180 days, or for no more than 270 days if the generator must transport the waste (or offer the waste for transport) more than 200 miles from the generating facility; and

(ii) The generator first notifies the EPA Regional Administrator and the Director of the Division of Solid Waste Management in writing of its intent to begin accumulation of hazardous waste for extended time periods under the provisions of this part. Such advance notice must include:

(I) Name and EPA ID number of the facility, and specification of when the facility will begin accumulation of hazardous wastes for extended periods of time in accordance with this part; and

(II) A description of the types of hazardous wastes that will be accumulated for extended periods of time, and the units that will be used for such extended accumulation; and

(III) A statement that the facility has made all changes to its operations, procedures, including emergency preparedness procedures, and equipment, including equipment needed for emergency preparedness, that will be necessary to accommodate extended time periods for accumulating hazardous wastes; and

(IV) If the generator intends to accumulate hazardous wastes on-site for up to 270 days, a certification that a facility that is permitted (or operating under interim status) under Rule 1200-01-11-.07 to receive these wastes is not available within 200 miles of the generating facility; and

(iii) The waste is managed in:

(I) Containers, in accordance with the applicable requirements of paragraphs (9), (27), (28), and (29) of Rule 1200-01-11-.05 and subparagraph (9)(f) of Rule 1200-01-11-.06; or

(II) Tanks, in accordance with the applicable requirements of paragraphs (10), (27), (28), and (29) of Rule 1200-01-11-.05, except for part (10)(h)3 and subparagraph (10)(k) of Rule 1200-01-11-.05; or

(III) Drip pads, in accordance with paragraph (23) of Rule 1200-01-11-.05; or

(IV) Containment buildings, in accordance with paragraph (30) of Rule 1200-01-11-.05; and

(iv) The quantity of hazardous waste that is accumulated for extended time periods at the facility does not exceed 30,000 kg; and

(v) The generator maintains the following records at the facility for each unit used for extended accumulation times:

(I) A written description of procedures to ensure that each waste volume remains in the unit for no more than 180 days (or 270 days, as applicable), a description of the waste generation and management practices at the facility showing that they are consistent with the extended accumulation time limit, and documentation that the procedures are complied with; or

(II) Documentation that the unit is emptied at least once every 180 days (or 270 days, if applicable); and

(vi) Each container or tank that is used for extended accumulation time periods is labeled or marked clearly with the words ``Hazardous Waste,'' and for each container the date upon which each period of accumulation begins is clearly marked and visible for inspection; and

(vii) The generator complies with the requirements for owners and operators in paragraphs (3) and (4) of Rule 1200-01-11-.05, with subparagraph (2)(g) of Rule 1200-01-11-.05, and with subpart (1)(g)1(v) of Rule 1200-01-11-.10. In addition, such a generator is exempt from all the requirements in paragraphs (7) and) (8) of Rule 1200-01-11-.05, except for subparagraphs (7)(b) and (7)(e) of Rule 1200-01-11-.05; and

(viii) The generator has implemented pollution prevention practices that reduce the amount of any hazardous substances, pollutants, or contaminants released to the environment prior to its recycling, treatment, or disposal; and

(ix) The generator includes the following with its EPA Performance Track Annual Performance Report, which must be submitted to the EPA Regional Administrator and the Director of the Division of Solid Waste Management:

(I) Information on the total quantity of each hazardous waste generated at the facility that has been managed in the previous year according to extended accumulation time periods; and

(II) Information for the previous year on the number of off-site shipments of hazardous wastes generated at the facility, the types and locations of destination facilities, how the wastes were managed at the destination facilities (e.g., recycling, treatment, storage, or disposal), and what changes in on-site or off-site waste management practices have occurred as a result of extended accumulation times or other pollution prevention provisions of this part; and

(III) Information for the previous year on any hazardous waste spills or accidents occurring at extended accumulation units at the facility, or during off-site transport of accumulated wastes; and

(IV) If the generator intends to accumulate hazardous wastes on-site for up to 270 days, a certification that a facility that is permitted (or operating under interim status) under Rule 1200-01-11-.07 to receive these wastes is not available within 200 miles of the generating facility; and

14. If hazardous wastes must remain on-site at an EPA Performance Track member facility for longer than 180 days (or 270 days, if applicable) due to unforseen, temporary, and uncontrollable circumstances, an extension to the extended accumulation time period of up to 30 days may be granted at the discretion of the Director of the Division of Solid Waste Management on a case-by-case basis.

15. If a generator who is a member of the EPA Performance Track Program withdraws from the EPA Performance Track Program, or if the EPA Region IV Administrator terminates a generator's membership, the generator must return to compliance with all otherwise applicable hazardous waste regulations as soon as possible, but no later than six months after the date of withdrawal or termination.

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(5)(c) or Rule 1200-01-11-.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(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

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;

(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) (Reserved)

(v) (Reserved)

(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, .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 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 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 of hazardous waste in a calendar month must submit an Exception Report to the Commissioner if he has not received a copy of the manifest with the handwritten signature of the owner or operator of the designated 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.)

(d) Special Requirements for Generators of Between 100 and 1000 kg/month

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.

(6) 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. 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(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. 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), 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(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(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(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 if:

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), 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 this section are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator.

(i) (Reserved) International Agreements [40 CFR 262.58]

(7) 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 (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(5)(b)1(iii) and 1200-01-11-.06(5)(b)1(iii).

(8) (Reserved) Transfrontier Shipments of Hazardous Waste for Recovery within the OECD [40 CFR 262 Subpart H]

(Note: Subpart H administered by EPA.)

(9) 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. 2050-003

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:

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

INT'L

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

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

GENERATOR

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. §§4-5-202 and 68-212-101 et seq.

1200-01-11-.04 Requirments 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.

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 if he:

(i) Transports hazardous waste into the state from a foreign country (except for the notification requirements of Rule 1200-01-11-.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)].

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(1)(b)2(vii)(I)IV or (IV) or Rule 1200-01-11-.06(1)(b)2(vii)(I)IV or (IV) and Rule 1200-01-11-.07(1)(b)5(i)(IV) or (iii).

7. Rule 1200-01-11-.09(13)(d) identifies how the requirements of this Rule apply to military munitions classified as solid waste under Rule 1200-01-11-.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. 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 specified on forms provided by the Commissioner. The log shall be retained for a period of three (3) years and made available for review by the Commissioner's representative.

3. A hazardous waste transfer facility shall comply with the provisions of Rule 1200-01-11-.05(2)(g), Personnel Training, Rule 1200-01-11-.05(9), Use and Management of Containers, except subparagraphs (e) and (i), and Rule 1200-01-11-.06(2)(e), Security.

4. A transporter who stores 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 is not subject to regulation under Rules 1200-01-11-.05, 1200-01-11-.06, 1200-01-11-.07, or 1200-01-11-.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(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(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 1200-1-13.

(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.

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, subparagraph (1)(g) of Rule 1200-01-11-.02, and subparagraphs (3)(a) and (3)(b) of Rule 1200-01-11-.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(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(5)(c)5(i) though (vi) or 6(i) through (vi) or Rule 1200-01-11-.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(5)(c)5(i) through (vi) or Rule 1200-01-11-.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. §§4-5-202 and 68-212-101 et seq.

1200-01-11-.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(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(2) and (3) until either a permit is issued under Rule 1200-01-11-.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(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. 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, and the standards of Rule 1200-01-11-.10 are considered material conditions or requirements of Rule 1200-01-11-.05 interim status.

(Note: Rule Chapter 1200-01-11 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(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(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(1)(f)1(ii), (iii), and (iv) (except to the extent they are referred to in Rule 1200-01-11-.11 or in paragraph (3), (6), (7), or (8) of Rule 1200-01-11-.09);

(iv) A generator accumulating waste on-site in compliance with Rule 1200-01-11-.03(4)(e) (except to the extent such requirements are included in

Rule 1200-01-11-.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(2);

(vi) The owner or operator of one of the following units, as defined in Rule 1200-01-11-.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(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(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(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 and 1200-01-11-.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 1200-4-6 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(1)(d)1(ii)(II).

(xii) Universal waste handlers and universal waste transporters (as defined in Rule 1200-01-11-.01(2)(a)) handling the wastes listed in Rule 1200-01-11-.12(1)(a). These handlers are subject to regulation under Rule 1200-01-11-.12, when handling the universal wastes listed in Rule 1200-01-11-.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 to the extent those requirements are included in a permit-by-rule granted to such a person under Rule 1200-01-11-.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(12)(a)3 as well as all other applicable requirements of paragraph (12) of this Rule.

(d) Rule 1200-01-11-.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(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 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(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)]

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, and Rule 1200-01-11-.08. (Also see Rule 1200-01-11-.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.

(ii) The analysis may include data developed under Rule 1200-01-11-.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 1(i) of this subparagraph. 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 1(i) of this subparagraph, except as otherwise specified in Rule 1200-01-11-.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; or

(II) An equivalent sampling method.

(Comment: See Rule 1200-01-11-.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(1)(g).

(vii) For surface impoundments exempted from land disposal restrictions under Rule 1200-01-11-.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(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(3); or

II. Where no treatment standards have been established;

A. Such residues are prohibited from land disposal under Rule 1200-01-11-.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) 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 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.)

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 any 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) 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 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. 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;

(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.

(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 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 in the field.

4. Certification

The owner or operator of units subject to 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.

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.

(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. 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(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, .04, and .05.)

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) 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 1200-01-11-.09.

2. The revised Manifest form and procedures in subparagraphs (2)(a) of Rule 1200-01-11-.01, (1)(g) of Rule 1200-01-11-.02, and (5)(a), (5)(b), (5)(c) and (5)(g) of this Rule 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 1200-01-11-.05) 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 to the following address within 30 days of delivery: 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(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.

(Comment: The provisions of Rule 1200-01-11-.03(4)(e) are applicable to the on-site accumulation of hazardous wastes by generators. Therefore, the provisions of Rule 1200-01-11-.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)]

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(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(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(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).

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(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.

(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(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 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 for Item 5.

(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 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) of this part.

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 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 Rules 1200-01-11-.10(1)(d) and .10(1)(g);

(iv) Summary reports and details of all incidents that require implementing the contingency plan as specified in part (4)(g)10 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(1)(e), monitoring data required pursuant to a petition under Rule 1200-01-11-.10(1)(f), or a certification under Rule 1200-01-11-.10(1)(h), and the applicable notice required by a generator under Rule 1200-01-11-.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(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(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(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(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(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(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, 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)10 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) Is used to neutralize wastes which are hazardous solely because they exhibit the corrosivity characteristic under Rule 1200-01-11-.02(3)(c) or are listed as hazardous wastes in Rule 1200-01-11-.02(4) only for this reason, and (2) 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(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(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, 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) 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, 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, 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.

(vii) If the owner or operator determines, based on the first determination under subpart 4(iv) of this paragraph, 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 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, 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 paragraph 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 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 (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 (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 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(1)(b)9 and are regulated under an enforceable document (as defined in Rule 1200-01-11-.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(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 parts (6)(a)6, (7)(a)4, and/or (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 parts (6)(a)6, (7)(a)4, and/or (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(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(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, 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(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(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). 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.

(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(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)-(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)-(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 parts (6)(a)6, (7)(a)4, and/or (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 parts (6)(a)6, (7)(a)4, and/or (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(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(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(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(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(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(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(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 Rule Chapter 1200-01-11-.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) and part (j)1 of this paragraph 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(1)(b)2, but who obtain enforceable documents in lieu of post-closure permits, as provided under Rule 1200-01-11-.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 (5)(b)14;

(ii) The requirements for facility-wide corrective action in Rule 1200-01-11-.06(6)(l);

(iii) The requirements of Rules 1200-01-11-.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(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(1)(b)9, unless the facility qualifies for a modification to these public involvement procedures under subpart 2(ii) or (iii) of this subparagraph.

(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 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 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 1200-01-11-.05(10)(h) to meet the requirements for landfills; and

(iii) Containment buildings that are required under Rule 1200-01-11-.05(30)(c) 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 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(1)(b)9), where the Commissioner:

(i) Prescribes alternative requirements for the regulated unit under part (6)(a)6 and/or (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 1200-4-6-.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. 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)-(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(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(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:

$$Next\ payment = \frac{CE - CV}{Y}$$

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(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(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(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(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(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 1-4 of the letter from the owner's or operator's chief financial officer (Rule 1200-01-11-.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 1-4 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 1200-4-6).

(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(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(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(8)(p)9. The wording of the certificate of insurance must be identical to the wording specified in Rule 1200-01-11-.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(9)(c)3(xiii) and subject to the procedures of Rule 1200-01-11-.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(9)(c)3(xiii) and subject to the procedures of Rule 1200-01-11-.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(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(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(8)(p)7 to cover both forms of financial responsibility; a separate letter as specified in Rule 1200-01-11-.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(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(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(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(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(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(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(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(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, 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 0f 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(2)(b)1.)

2. Tank systems, including sumps, as defined in Rule 1200-01-11-.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(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(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(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(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(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, it is subject to management as a hazardous waste in accordance with all applicable requirements of Rule 1200-01-11-.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(3)(b), or

II. Meets the definition of reactive waste under Rule 1200-01-11-.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(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 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 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. 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) 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, 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(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(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(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(2)(b)).

(j) Special Requirements for Incompatible Wastes [40 CFR 265.199]

(i) 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) 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. 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(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, .04, and .05.)

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) the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under Rule 1200-01-11-.02(3)(b) or (d), and (B) 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(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(11)(b)3, unless exempted under Rule 1200-01-11-.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(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(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(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 or the granting of an extension to the effective date of a prohibition pursuant to Rule 1200-01-11-.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, 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(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 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, 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; 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. 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(12)(b)3, unless exempted under Rule 1200-01-11-.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(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, 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(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(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, 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(3)(e) that cause a waste to exhibit the Toxicity Characteristic;

2. For any waste listed in Rule 1200-01-11-.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 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(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(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.

(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 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, 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(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 (b)3, unless exempted under part (b)4, 5, or 6 of Rule 1200-01-11-.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(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(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). 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, 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)-(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 3(iii)(IV) and subpart 3(iv) of Rule 1200-01-11-.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, and:

   (i) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under paragraphs (b) or (d) of Rule 1200-01-11-.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, 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(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(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 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(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(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. Persons who incinerate lab packs according to the requirements in Rule 1200-01-11-.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(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, 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) (Closure) and the applicable requirements of paragraphs (1) through (8), (28), and (29) of this Rule.

   (iii) Subparagraph (15)(f) of this Rule 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 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(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(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(4) solely because it is reactive (Hazard Code R) for characteristics other than those listed in Rule 1200-01-11-.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(3); or

   (iv) A hazardous waste solely because it possesses the reactivity characteristics described by Rule 1200-01-11-.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)-(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)-(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(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 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(8), if the unit is a boiler or an industrial furnace as defined in Rule 1200-01-11-.01(2)(a).

(b)-(c) (RESERVED) [40 CFR 265.371-265.372]

(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)-(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(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 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 (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(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 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(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) - (22) (RESERVED) [40 CFR 265 Subpart S-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 x 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 x 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 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 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) - (26) (RESERVED) [40 CFR 265 Subparts X-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, 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(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, or

(iii) A unit that is exempt from permitting under the provisions of Rule 1200-01-11-.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(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 subparagraph (c) through (f) apply to process vents on hazardous waste recycling units previously exempt under Rule 1200-01-11-.02(1)(f)3(i). Other exemptions under Rules 1200-01-11-.02(1)(d) and .05(1)(b)2 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(30)(b), Tennessee Code Annotated §§68-212-101 et seq., Rules 1200-01-11-.01 through .06, and Rule 1200-01-11-.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 1(ii)(III) 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).

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.

(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:

$$H_t = K \left[\sum^{n} C_i H_i \right]$$

i = 1

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 x 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(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(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:

$$\mathrm{Log}_{10}(V_{max}) = (H_T + 28.8) / 31.7$$

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:

$$V_{max} = 8.706 + 0.7084(H_T)$$

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 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 subpart 6(i) and 6(ii) of this subparagraph 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 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, 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 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.

(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.

(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.

(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 which implements the requirements of Rule 1200-01-11-.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 Rule 1200-01-11-.05 or paragraphs (30) and (32) of Rule 1200-01-11-.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 which implements the requirements of Rule 1200-01-11-.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 which implements the requirements of Rule 1200-01-11-.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(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.

$$E_h = Q_{2sd}\left[\sum_{i=1}^{n} C_i MW_i\right] (0.0416)(10^{-6})$$

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.

(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(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 (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(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 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;

(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 (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; or

(iii) A unit that is exempt from permitting under the provisions of part (4)(e)2 of Rule 1200-01-11-.03 (i.e., a "90-day" tank or container) and is not a recycling unit under the provisions of Rule 1200-01-11.02(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(1)(f)3(i). Other exemptions under Rule 1200-01-11-.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(30)(b), Tennessee Code Annotated §§68-212-101 et seq., Rules 1200-01-11-.01 through .06, and Rule 1200-01-11-.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 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, 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 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 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

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.

   (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 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(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(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(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 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 (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)-(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 subparagraph (o) 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(30)(a).

(ix) Wastewater treatment units as defined in Rule 1200-01-11-.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(32) shall be incorporated into the permit when the permit is reissued in accordance with the requirements of Rule 1200-01-11-.07(7)(i) or reviewed in accordance with the requirements of Rule 1200-01-11-.07(8)(c).

(ii) Until the date when the permit is reissued in accordance with the requirements of Rule 1200-01-11-.07(7)(i) or reviewed in accordance with the requirements of Rule 1200-01-11-.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)-(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.

(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 are managed at the facility in tanks or containers meeting the conditions of subpart 4(ii) of this subparagraph. 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 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 ^{o}C; and the total concentration of the pure organic constituents having a vapor pressure greater than 0.3 kPa at 20 ^{o}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 1200-01-11-.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 x 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(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.

   (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 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 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.

(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, and designs and operates the unit in accordance with the requirements of Rule 1200-01-11-.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 and which implements the requirements of Rule 1200-01-11-.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(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, 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.

(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--Land Disposal Restrictions under Table ``Treatment Standards for Hazardous Waste'' in Rule 1200-01-11-.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(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(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.

(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 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.

(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, 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 or by knowledge as specified in subpart 1(iv) of this subparagraph.

(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, 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 and the following equation:

$$\overline{C} = \frac{1}{Q_T} x \sum_{i=1}^{n} \left(Q_i x C_i \right)$$

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, 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, 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 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.

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.

(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, or items (I) through (VI) of subpart (29)(d)3(ii) of this Rule 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 x 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 and the following equation:

$$\overline{C} = \frac{1}{Q_T} x \sum_{i=1}^{n} \left(Q_i x C_i \right)$$

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, (i.e. the average of the four or more samples specified in subitem 2(iii)(II)II of this subparagraph), ppmw.

(V) Provided that the test method is appropriate for the waste as required under item 2(iii)(III) of this subparagraph, 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, 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, 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.

$\overline{C_x}$ = 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 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 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, 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, 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:

$R_{bio} = F_{bio}$ x 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.

(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.

(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 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, 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, 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.

(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, 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, kg/hr.

F_{bio} = Fraction of organic biodegraded as determined in accordance with the requirements of item 2(ix)(III) of this subparagraph.

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 or knowledge of the waste as specified by subpart 3(iv) of this subparagraph 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(2)(b)1):

III. Methods obtained from standard reference texts;

IV. ASTM Method 2879-92 (listed in Rule 1200-01-11-.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. 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, 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.

(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, 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.

3. Owners and operators controlling air pollutant emissions from a tank using Tank Level 1 controls shall meet the requirements specified in subpart 3(i) through 3(iv) of this subparagraph:

(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.

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, 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) of this subparagraph.

(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:

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) of this subparagraph 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, 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.

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 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.

(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.

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 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.

V. In the event that the seal gap measurements do not conform to the specifications in item 6(i)(II) of this subparagraph, 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, 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, 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.

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 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.

(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

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(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. 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.

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(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.

(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, to the tank from another tank subject to this section 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 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.

(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, 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, 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.

(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 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, 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.

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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.

(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, 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 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.

(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 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 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(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(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(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 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 (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.

(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.

(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(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(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(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 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 (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.

(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.

(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.

(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.

(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.

(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.

(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 or a seal or locking device as specified in item 2(iii)(II) of this subparagraph. 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 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 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.

(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, 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 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 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 (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, 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 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 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 as follows:

(I) An owner or operator shall demonstrate using either a performance test as specified in item 3(v)(III) of this subparagraph or a design analysis as specified in item 3(v)(IV) of this subparagraph 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 and has designed and operates the unit in accordance with the requirements of Rule 1200-01-11-.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(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, 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, 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 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. 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, 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 or by performance tests as specified in item 5(i)(III) of this subparagraph 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 for those planned routine maintenance operations that would require the control device not to meet the requirements of item 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 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 for those unexpected control device system malfunctions that would require the control device not to meet the requirements of item 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 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).

   (ii) A description of how the hazardous waste containing the organic peroxide compounds identified in subpart 9(i) of this subparagraph 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 in the tanks and containers as described in subpart 9(ii) of this subparagraph 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(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.

(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(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(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(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(14)(k)).

(32)-(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 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(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(4), and each hazardous waste characteristic defined in Rule 1200-01-11-.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):
$Y/X= K_a x 5.2x10^{-4}$; THUS, 0.1 $Y/X=1.8x10^{-4}$ 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. §§4-5-202 and 68-212-101 et seq.

1200-01-11-.06 Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities

(1) General [40 CFR 264 Subpart A]

(a) Purpose

1. The purpose of this Rule is to establish standards which define the acceptable management of hazardous wastes in Tennessee. These standards provide a basis upon which permit applications for facilities will be evaluated.

(b) Applicability

1. The standards in this Rule apply to owners and operators of all facilities which treat, store, or dispose of hazardous wastes, except as specifically provided otherwise in this Rule or Rule 1200-01-11-.02.

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 §68-211-111, 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(1)(e) as a "small quantity".

(ii) The owner or operator of a facility managing recyclable materials described in Rule 1200-01-11-.02(1)(f)1(ii),(iii) and (iv) (except to the extent they are referred to in Rule 1200-01-11-.11 or Rule 1200-01-11-.09(3),(6),(7) or (8).

(iii) A generator accumulating waste on-site in compliance with Rule 1200-01-11-.03(4)(e), unless the generator is accumulating the waste in a facility otherwise subject to this Rule.

(iv) The owner or operator of a totally enclosed treatment facility, as defined in Rule 1200-01-11-.01(2).

(v) The owner or operator of one of the following units, as defined in Rule 1200-01-11-.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(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(7).

(vi) The addition of absorbent material to waste in a container (as defined in Rule 1200-01-11-.01(2)) or the addition of waste to absorbent material in a container, provided that these actions occur at the time waste is first placed in the container, and the owners or operators are in compliance with part (2)(h)2 of this Rule and subparagraphs (9)(b) and (c) of this Rule.

(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; and

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(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 Rule 1200-01-11-.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 farmer disposing of waste pesticides from his own use in compliance with Rule 1200-01-11-.02(l)(b)1(ii)(II).

(x) Universal waste handlers and universal waste transporters (as defined in Rule 1200-01-11-.01(2)(a)) handling the wastes listed in Rule 1200-01-11-.12(1)(a). These handlers are subject to regulation under Rule 1200-01-11-.12, when handling the universal wastes listed in Rule 1200-01-11-.12(1)(a).

3. The requirements of this Rule apply to a person disposing of hazardous waste by means of underground injection subject to permits issued under the Tennessee Water Quality Control Act (T.C.A. §§69-3-101 et seq.), through Chapter 1200-4-6 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.) only to the extent they are included in a permit-by-rule granted to such a person under Rule 1200-01-11-.07(1)(c).

4. The requirements of this Rule apply to the owner or operator of a POTW which treats, stores, or disposes of hazardous waste only to the extent they are included in a permit-by-rule granted to such a person under Rule 1200-01-11-.07(1)(c).

5. The requirements of this Rule apply to the owner or operator of an on-site wastewater treatment unit, or to the owner or operator of an off-site wastewater treatment unit where the only wastes received from off-site are from facilities owned or operated by the same manufacturing corporation or subsidiaries of such corporation or from product distribution facilities operating under contract to that manufacturing corporation or subsidiaries only to the extent they are included in a permit-by-rule granted to such a person under Rule 1200-01-11-.07(1)(c).

6. The requirements of this Rule apply to the owner or operator of a transfer facility where manifested shipments of hazardous waste in containers meeting applicable DOT and the Tennessee Regulatory Commission (TRC) packaging regulations are stored for a period of greater than 48 hours but less than ten days only to the extent they are included in a permit-by-rule granted to such a person under Rule 1200-01-11- .07(1)(c).

7. The requirements of this Rule apply to owners or operators of all facilities which treat, store, or dispose of hazardous wastes referred to in Rule 1200-01-11-.10.

8. Rule 1200-01-11-.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(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 through .10.

9. The requirements of paragraphs (2), (3), and (4) of this Rule and subparagraph (6)(l) of this Rule do not apply to remediation waste management sites. (However, some remediation waste management sites may be a part of a facility that is subject to a traditional RCRA permit because the facility is also treating, storing or disposing of hazardous wastes that are not remediation wastes. In these cases, paragraphs (2), (3), and (4) and subparagraph (6)(l) of this Rule do apply to the facility subject to the traditional RCRA permit.) Instead of the

requirements of paragraphs (2), (3), and (4) of this Rule, owners or operators of remediation waste management sites must:

(i) Obtain an Installation Identification Number by applying to the Director using EPA Form 8700-12;

(ii) Obtain a detailed chemical and physical analysis of a representative sample of the hazardous remediation wastes to be managed at the site. At a minimum, the analysis must contain all of the information which must be known to treat, store or dispose of the waste according to this Rule and Rule 1200-01-11-.10, and must be kept accurate and up to date;

(iii) Prevent people who are unaware of the danger from entering, and minimize the possibility for unauthorized people or livestock to enter onto the active portion of the remediation waste management site, unless the owner or operator can demonstrate to the Commissioner that:

(I) Physical contact with the waste, structures, or equipment within the active portion of the remediation waste management site will not injure people or livestock who may enter the active portion of the remediation waste management site; and

(II) Disturbance of the waste or equipment by people or livestock who enter onto the active portion of the remediation waste management site, will not cause a violation of the requirements of this Rule;

(iv) Inspect the remediation waste management site for malfunctions, deterioration, operator errors, and discharges that may be causing, or may lead to, a release of hazardous waste constituents to the environment, or 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, and must remedy the problem before it leads to a human health or environmental hazard. Where a hazard is imminent or has already occurred, the owner/operator must take remedial action immediately;

(v) Provide personnel with classroom or on-the-job training on how to perform their duties in a way that ensures the remediation waste management site complies with the requirements of this Rule, and on how to respond effectively to emergencies;

(vi) Take precautions to prevent accidental ignition or reaction of ignitable or reactive waste, and prevent threats to human health and the environment from ignitable, reactive and incompatible waste;

(vii) For remediation waste management sites subject to regulation under paragraphs (9) through (15) and (27) of this Rule, the owner/operator must design, construct, operate, and maintain a unit within a 100-year floodplain to prevent washout of any hazardous waste by a 100-year flood, unless the owner/operator can meet the demonstration of part (2)(i)2 of this Rule;

(viii) Not place any non-containerized or bulk liquid hazardous waste in any salt dome formation, salt bed formation, underground mine or cave;

(ix) Develop and maintain a construction quality assurance program for all surface impoundments, waste piles and landfill units that are required to comply with parts (11)(b)3 and 4, (12)(b)3 and 4, and (14)(b)3 and 4 of this Rule at the remediation waste management site, according to the requirements of subparagraph (2)(j) of this Rule;

(x) Develop and maintain procedures to prevent accidents and a contingency and emergency plan to control accidents that occur. These procedures must address proper design, construction, maintenance, and operation of remediation waste management units at the site. The goal of the plan must be to minimize the possibility of, and the hazards from a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water that could threaten human health or the environment. The plan must explain specifically how to treat, store and dispose of the hazardous remediation waste in question, and must be implemented immediately whenever a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment;

(xi) Designate at least one employee, either on the facility premises or on call (that is, available to respond to an emergency by reaching the facility quickly), to coordinate 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;

(xii) Develop, maintain and implement a plan to meet the requirements in subparts 9(ii) through 9(vi) and 9(ix) through 9(x) of this subparagraph; and

(xiii) Maintain records documenting compliance with subparts 9(i) through 9(xii) of this subparagraph.

(c) Relationship to Interim Status Standards [40 CFR 264.3]

A facility owner or operator who has fully complied with the requirements for interim status - as defined in Rule 1200-01-11-.07(3) - must comply with the regulations specified in Rule 1200-01-11-.05 in lieu of the regulations of this Rule, until final administrative disposition of his permit application is made, except as provided under paragraph (22) of this Rule.

(d) Waivers

Any standard in this Rule may be waived by the Commissioner if the owner or operator can demonstrate to the satisfaction of the Commissioner that the standard is inapplicable, inappropriate, or unnecessary to his facility, or that it is equaled in effect by other procedures or mechanisms utilized at the facility. Any such waiver must be granted in writing.

(2) General Facility Standards [40 CFR 264 Subpart B]

(a) Applicability [40 CFR 264.10]

1. The regulations in this subpart apply to owners and operators of all hazardous waste facilities, except as provided in subparagraphs (1)(b) and (d) of this Rule and in part 2 of this subparagraph.

2. Part (i)2 of this paragraph applies only to facilities subject to regulation under paragraphs (9)-(15) and (27) of this Rule.

(b) Identification Number

Installation Identification Numbers will be assigned to facilities as part of the permit issued pursuant to Rule 1200-01-11-.07.

(c) Required Notices [40 CFR 264.12]

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 264.12(a)(2)]

2. The owner or operator of a facility that receives hazardous waste from an off-site source (except where the owner or operator is also the generator) must inform the generator in writing that he has the appropriate permit(s) for, and will accept, the waste the generator is shipping. The owner or operator must keep a copy of this written notice as part of the operating record.

3. 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 and Rule 1200-01-11-.08.

(Comment: An owner's or operator's failure to notify the new owner or operator of the requirements of this part in no way relieves the new owner or operator of his obligation to comply with all applicable requirements.)

(d) General Waste Analysis [40 CFR 264.13]

1. (i) Before an owner or operator treats, stores, or disposes of any hazardous wastes, or nonhazardous wastes if applicable under subparagraph (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.

(ii) The analysis may include data developed under Rule 1200-01-11-.02, and existing published or documented data on the hazardous waste or on hazardous 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 1200-01-11-.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 subparagraph (7)(d)4 of this Rule, has changed; and

(II) For off-site facilities, when the results of the inspection required in subpart (iv) of this part 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 subparagraph (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 part 1 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(5); or

(II) An equivalent sampling method.

(Comment: See Rule 1200-01-11-.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.

(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 (2)(h), (14)(o), and (15)(b) and parts (30)(e)4 and (31)(n)4 and subparagraph (32)(d) of this Rule and Rule 1200-01-11-.10(1)(g).

(vii) For surface impoundments exempted from land disposal restrictions under Rule 1200-01-11-.10(1)(d)1, the procedures and schedules 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(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(3); or

II. Where no treatment standards have been established:

A. Such residues are prohibited from land disposal under Rule 1200-01-11-.10(2)(c); or

B. Such residues are prohibited from land disposal under Rule 1200-01-11-.10(2)(d)6.

(viii) For owners and operators seeking an exemption to the air emission standards of paragraph (32) of this Rule in accordance with subparagraph (32)(c) 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;

(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; and

(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.

(Comment: Rule 1200-01-11-.07 requires that the waste analysis plan be submitted with part B of the permit application.)

(e) Security [40 CFR 264.14]

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 he can demonstrate to the Commissioner that:

(i) Physical contact with the waste, structures, or equipment within 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 Rule.

(Comment: Rule 1200-01-11-.07 requires that an owner or operator who wishes to make the demonstration referred to above must do so with part B of the permit application.)

2. Unless the owner or operator has made a successful demonstration 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 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.)

3. Unless the owner or operator has made a successful demonstration 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 264.15]

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 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 (v) of this part. At a minimum, the inspection schedule must include the items and frequencies called for in subparagraphs (9)(e), (10)(d), (10)(f), (11)(g), (12)(e), (13)(i), (14)(d), (15)(h), (27)(c), (30)(d), (31)(c), (31)(d), (31)(i), and (32)(d) through (32)(j) of this Rule, where applicable.

(Comment: Rule 1200-01-11-.07 requires the inspection schedule to be submitted with part B of the permit application. The Department will evaluate the schedule along with the rest of the application to ensure that it adequately protects human health and the environment. As part of this review, the Department may modify or amend the schedule as may be necessary.)

   (v) Performance Track member facilities that choose to reduce their inspection frequency must:

      (I) Submit a request for a Class 1 permit modification with prior approval to the Regional Administrator. The modification request 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. The modification request must also specify, in writing, that the reduced inspection frequency will apply for as long as the facility is a Performance Track member facility, and that within seven calendar days of ceasing to be a Performance Track member, the facility will revert to the non-Performance Track inspection frequency. 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 request 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 request for a Class 1 permit modification and keep a copy of the application in the facility's operating record.

(III) Any Performance Track member facility that discontinues their membership or is terminated from the program must immediately notify the Regional Administrator of their 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 264.16]

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.

(Comment: Rule 1200-01-11-.07 requires that owners and operators submit with part B of the permit application, an outline of the training program used (or to be used) at the facility and a brief description of how the training program is designed to meet actual job tasks.)

(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 part, provided that 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 employees 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 264.17]

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 sections of this part, the owner or operator of a facility that treats, stores or disposes ignitable or reactive waste, or mixes incompatible waste or incompatible wastes and other materials, must take precautions to prevent reactions which:

(i) Generate extreme heat or pressure, fire or explosions, or violent reactions;

(ii) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;

(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;

(v) Through other like means threaten human health or the environment.

3. When required to comply with parts 1 and 2 of this subparagraph, the owner or operator must document that compliance. This documentation may be based on references to published scientific or engineering literature, data from trial tests (e.g., bench scale or pilot scale tests), waste analyses (as specified in subparagraph (2)(d) of this Rule), or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions.

(i) Location Standards [40 CFR 264.18]

(Note: Commercial Facilities must also comply with Rule 1200-1-14.)

1. Seismic Considerations - (Reserved – See Rule 1200-1-14-.03(2))

2. Floodplain Considerations

(i) No new facility shall be located in the 100-year floodplain unless it is demonstrated, to the satisfaction of the Commissioner, that location in the floodplain will not significantly aggravate upstream or downstream flooding.

(ii) A facility located in a 100-year floodplain must be designed, constructed, operated, and maintained to prevent washout or any hazardous waste by a 100-year flood, unless the owner or operator can demonstrate to the Commissioner's satisfaction that:

(I) Procedures are in effect which will cause the waste to be removed safely, before flood waters can reach the facility, to a location where the wastes will not be vulnerable to flood waters; or

(II) For existing surface impoundments, waste piles, land treatment units, landfills, and miscellaneous units, no adverse effects on human health or the environment will result if washout occurs, considering:

I. The volume and physical and chemical characteristics of the waste in the facility;

II. The concentration of hazardous constituents that would potentially affect surface waters as a result of washout;

III. The impact of such concentrations on the current or potential uses of and water quality standards established for the affected surface waters; and

IV. The impact of hazardous constituents on the sediments of affected surface waters or the soils of the 100-year floodplain that could result from washout.

(Comment: Where removal procedures are demonstrated, the location where wastes are moved must be a facility which, if in Tennessee, must have a permit or interim status under Rule 1200-01-11-.07 or, if in another state, must be authorized by that State or EPA to manage that hazardous waste.)

(iii) As used in this part:

(I) "100-year floodplain" means any land area which is subject to a one percent or greater chance of flooding in any given year from any source.

(II) "Washout" means the movement of hazardous waste from the active portion of the facility as a result of flooding.

(III) "100-year flood" means a flood that has a one percent chance of being equalled or exceeded in any given year.

3. Salt Dome Formations, Salt Bed Formations, Underground Mines and Caves

The placement of any noncontainerized or bulk liquid hazardous waste in any salt dome formation, salt bed formation, underground mine or cave is prohibited.

(j) Construction Quality Assurance Program [40 CFR 264.19]

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 parts (11)(b)3 and 4, (12)(b)3 and 4, and (14)(b)3 and 4 of this Rule. 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

The owner or operator of units subject to the CQA program under part 1 of this subparagraph must develop and implement 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 this Rule.

(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 subitems (11)(b)3(i)(I)II, (12)(b)3(i)(I)II, and (14)(b)3(i)(I)II of this Rule in the field. Compliance with the hydraulic conductivity requirements must be verified by using in-situ testing on the constructed test fill. The Commissioner may accept an alternative demonstration, in lieu of a test fill, where data are sufficient to show that a constructed soil liner will meet the hydraulic conductivity requirements of subitems (11)(b)3(i)(I)II, (12)(b)3(i)(I)II, and (14)(b)3(i)(I)II of this Rule in the field.

4. Certification

Waste shall not be received in a unit subject to subparagraph (2)(j) of this Rule until the owner or operator has submitted to the Commissioner by certified mail or hand delivery a certification signed by the CQA officer that the approved CQA plan has been successfully carried out and that the unit meets the requirements of parts (11)(b)3 or 4, (12)(b)3 or 4, or (14)(b)3 or 4 of this Rule; and the procedure in Rule 1200-01-11-.07(8)(a)12(ii)II has been completed. 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 264 Subpart C]

(a) Applicability [40 CFR 264.30]

The regulations in this paragraph apply to owners and operators of all hazardous waste facilities, except as otherwise provided in subparagraphs (1)(b) and (1)(d) of this Rule.

(b) Design and Operation of Facility [40 CFR 264.31]

Facilities must be designed, constructed, 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 264.32]

All facilities must be equipped with the following, unless it can be demonstrated to the Commissioner that 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.

(Comment: Rule 1200-01-11-.07 requires that an owner or operator who wishes to make the demonstration referred to above must do so with part B of the permit application.)

(d) Testing and Maintenance of Equipment [40 CFR 264.33]

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 264.34]

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 the Commissioner has ruled that 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 the Commissioner has ruled that such a device is not required under subparagraph (c) of this paragraph.

(f) Required Aisle Space [40 CFR 264.35]

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 it can be demonstrated to the Commissioner that aisle space is not needed for any of these purposes.

(Comment: Rule 1200-01-11-.07 requires that an owner or operator who wishes to make the demonstration referred to above must do so with part B of the permit application.)

(g) (RESERVED) [40 CFR 264.36]

(h) Arrangements with Local Authorities [40 CFR 264.37]

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 and 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 264 Subpart D]

(a) Applicability [40 CFR 264.50]

The regulations in this paragraph apply to owners and operators of all hazardous waste facilities, except as otherwise provided in subparagraph (1)(b) and (1)(d) of this Rule.

(b) Purpose and Implementation of Contingency Plan [40 CFR 264.51]

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 264.52]

1. The contingency plan must describe the actions facility personnel must take to comply with subparagraphs (b) through (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 Rule. 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. For new facilities, this information must be supplied to the Commissioner at the time of certification, rather than at the time of permit application.

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 264.53]

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.

(Comment: The contingency plan must be submitted to the Commissioner with part B of the permit application under Rule 1200-01-11-.07 and, after modification or approval, will become a condition of any permit issued.)

(e) Amendment of Contingency Plan [40 CFR 264.54]

The contingency plan must be reviewed, and immediately amended, if necessary, whenever:

1. The facility permit is 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 264.55]

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 264.56]

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-off 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 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 release 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(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, .04 and .06.)

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 264 Subpart E]

(a) 1. Applicability [40 CFR 264.70]

The regulations in this paragraph apply to owners and operators of both on-site and off-site facilities, except as subparagraph (1)(b) of this Rule provide 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 Rule 1200-01-11-.09(13)(d)1. Part (d)2 of this paragraph only applies to permittees who treat, store, or dispose of hazardous wastes on-site where such wastes were generated.

2. The revised Manifest form and procedures in subparagraph (2)(a) of Rule 1200-01-11-.01, subparagraph (1)(g) of Rule 1200-01-11-.02, and subparagraph (5)(a), (5)(b), (5)(c), and (5)(g) of Rule 1200-01-11-.06 became effective September 5, 2006.

(b) Use of Manifest System [40 CFR 264.71]

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 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 Agency 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 to the following address within 30 days of delivery: 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 Agency 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-.03(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 1200-1-1-.03.

(Comment: The provisions of Rule 1200-01-11-.03(4)(e) are applicable to the on-site accumulation of hazardous wastes by generators. Therefore, the provisions of Rule 1200-01-11-.03(4)(e) only apply to owners or operators who are shipping hazardous waste which they generated at that facility.)

4. (Reserved) [40 CFR 264.71(d)]

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 part (1)(g) 2 of Rule 1200-01-11-.02.

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 part (1)(g)2 of Rule 1200-01-11-.02, 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(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.

   (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 subparagraph (3)(a) of Rule 1200-01-11-.03 and the following instructions:

   (i) Write the facility'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 for Item 5.

   (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), and (vi) of this part.

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 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 264.73]

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 as follows:

(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 in paragraph (57) 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 that shows each cell or disposal area. For all facilities, this information must include cross-references to specific 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 subparagraph (7)(j) of this Rule for related requirements.)

(iii) Records and results of waste analyses and waste determinations performed as specified in subparagraphs (2)(d), (2)(h), (14)(o), (15)(b), (30)(e), (31)(n), (32)(d) of this Rule, and part (1)(d)1 and subparagraph (1)(g) of Rule 1200-01-11-.10;

(iv) Summary reports and details of all incidents that require implementing the contingency plan as specified in part (4)(g)10 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), subparagraphs (2)(j), (10)(b), (10)(d), (10)(f), (11)(c), (11)(d), (11)(g), (12)(c)-(12)(e), (13)(g), (13)(i), (13)(k), (14)(c)-(14)(e), (14)(j), (27)(c), parts (30)(e)3-(30)(e)6, subparagraph (30)(f), parts (31)(n)4-(31)(n)9, subparagraph (31)(o), and subparagraph (32)(c) through (32)(k) of this Rule. Maintain in the operating record for five years, except for records and results pertaining to ground-water monitoring and cleanup which must be maintained in the operating record until closure of the facility;

(vii) For off-site facilities, notices to generators as specified in part (2)(c)2 of this Rule;

(viii) 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. This information must be maintained in the operating record until closure of the facility;

(ix) A certification by the permittee no less often than annually, that the permittee has a program in place to reduce the volume and toxicity of hazardous waste that he generates to the degree determined by the permittee to be economically practicable; and the proposed method of treatment, storage or disposal is that practicable method currently available to the permittee which minimizes the present and future threat to human health and the environment;

(x) 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(1)(e), a petition pursuant to Rule 1200-01-11-.10(1)(f), or a certification under Rule 1200-01-11-.10(1)(h), and the applicable notice required by a generator under Rule 1200-01-11-.10(1)(g)1. This information must be maintained in the operating record until closure of the facility;

(xi) 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(1)(g) or (h);

(xii) 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(1)(g) or (h);

(xiii) 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(1)(g) or (h), whichever is applicable;

(xiv) For an on-site land disposal facility, the information contained in the notice required by the generator or owner or operator of a treatment facility under Rule 1200-01-11-.10(1)(g), except for the manifest number, and the certification and demonstration if applicable, required under Rule 1200-01-11-.10(1)(h), whichever is applicable;

(xv) 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(1)(g) or (h); and

(xvi) 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 under Rule 1200-01-11-.10(1)(g) or (h).

(xvii) Any records required under subpart (1)(b)9(xiii) of this Rule.

(xviii) Monitoring, testing or analytical data where required by subparagraph (15)(h) of this Rule must be maintained in the operating record for five years, or as required by a permit issued after the effective date of this Rulemaking, but no less than five (5) years.

(xix) Certifications as required by part (10)(g)6 of this Rule must be maintained in the operating record until closure of the facility;

(e) Availability, Retention, and Disposition of Records [40 CFR 264.74]

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 or Board.

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.

(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 in accordance with the instructions accompanying the form. The annual report must cover facility activities during the previous calendar year and must include the following information:

1. The installation identification number, name, and address of the facility;

2. The calendar year covered by the report;

3. For off-site facilities, the installation identification number of each hazardous waste generator from which the facility received a hazardous waste during the year; for imported shipments, the report must give the name and address of the foreign generator;

4. A description and the quantity of each hazardous waste the facility received during the year. For off-site facilities, this information must be listed by installation identification number of each generator;

5. The method of treatment, storage, or disposal for each hazardous waste;

6. (RESERVED)

7. The most recent closure cost estimate under subparagraph (8)(c) of this Rule, and, for disposal facilities, the most recent post-closure cost estimate under subparagraph (8)(e) of this Rule;

8. (Reserved)

9. (Reserved)

10. The certification signed by the owner or operator of the facility or his authorized representative;

(g) Unmanifested Waste Report [40 CFR 264.76]

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, and if the waste is not excluded from the manifest requirement by subparagraph (1)(e) of Rule 1200-01-11-.02, 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 be submitted on EPA form 8700-13B. Such report must be designated `Unmanifested Waste Report' and include 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

(vii) 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 264.76 (b)]

(h) Additional Reports [40 CFR 264.77]

In addition to submitting the annual report and unmanifested waste reports described in subparagraphs (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)10 of this Rule;

2. Facility closures specified in subparagraph (7)(f) of this Rule; and

3. As otherwise required by paragraphs (6), (11) through (14), (30), (31) and (32) of this Rule.

(6) Releases From Solid Waste Management Units [40 CFR 264 Subpart F]

(a) Applicability [40 CFR 264.90]

1. (i) Except as provided in part 2 of this subparagraph, the regulations in this subpart apply to owners or operators of facilities that treat, store or dispose of hazardous waste. The owner or operator must satisfy the requirements identified in subpart (ii) of this part for all wastes (or constituents thereof) contained in solid waste management units at the facility, regardless of the time at which waste was placed in such units.

(ii) All solid waste management units must comply with the requirements in subparagraph (l) of this paragraph. A surface impoundment, waste pile, and land treatment unit or landfill that receives hazardous waste after July 26, 1982 (hereinafter referred to as a "regulated unit") must comply with the requirements of subparagraphs (b) through (k) of this paragraph in lieu of subparagraph (l) of this paragraph for purposes of detecting, characterizing and responding to releases to the uppermost aquifer. The financial responsibility requirements of subparagraph (l) of this paragraph apply to regulated units.

2. The owner or operator's regulated unit or units are not subject to regulation for releases into the uppermost aquifer under this subpart if:

(i) The owner or operator is exempted under subparagraph (1)(b) of this Rule; or

(ii) He obtains a waiver under subparagraph (1)(d) of this Rule;

(iii) He operates a unit which the Commissioner finds:

(I) Is an engineered structure,

(II) Does not receive or contain liquid waste or waste containing free liquids,

(III) Is designed and operated to exclude liquid, precipitation, and other run-on and run-off,

(IV) Has both inner and outer layers of containment enclosing the waste,

(V) Has a leak detection system built into each containment layer,

(VI) The owner or operator will provide continuing operation and maintenance of these leak detection systems during the active life of the unit and the closure and post-closure care periods, and

(VII) To a reasonable degree of certainty, will not allow hazardous constituents to migrate beyond the outer containment layer prior to the end of the post-closure care period.

(iv) The Commissioner finds, pursuant to part (13)(k)4 of this Rule, that the treatment zone of a land treatment unit that qualifies as a regulated unit does not contain levels of hazardous constituents that are above background levels of those constituents by an amount that is statistically significant, and if an unsaturated zone monitoring program meeting the requirements of subparagraph (13)(i) of this Rule has not shown a statistically significant increase in hazardous constituents below the treatment zone during the operating life of the unit. An exemption under this subpart can only relieve an owner or operator of responsibility to meet the requirements of this subpart during the post-closure care period; or

(v) The Commissioner finds that there is no potential for migration of liquid from a regulated unit to the uppermost aquifer during the active life of the

regulated unit (including the closure period) and the port-closure care period specified under subparagraph (7)(h) of this Rule. This demonstration must be certified by a qualified geologist or geotechnical engineer. In order to provide an adequate margin of safety in the prediction of potential migration of liquid, the owner or operator must base any predictions made under this paragraph on assumptions that maximize the rate of liquid migration.

(vi) He designs and operates a pile in compliance with part (12)(a)3 of this Rule.

3. The regulations under this paragraph apply during the active life of the regulated unit (including the closure period). After closure of the regulated unit, the regulations in this paragraph:

(i) Do not apply if all waste, waste residues, contaminated containment system components, and contaminated subsoils are removed or decontaminated at closure;

(ii) Apply during the post-closure care period under subparagraph (7)(h) of this Rule if the owner or operator is conducting a detection monitoring program under subparagraph (i) of this paragraph; or

(iii) Apply during the compliance period under subparagraph (g) of this paragraph if the owner or operator is conducting a compliance monitoring program under subparagraph (j) of this paragraph or a corrective action program under subparagraph (k) of this paragraph.

4. Regulations in this paragraph may apply to miscellaneous units when necessary to comply with subparagraphs (27)(b)-(27)(d) of this Rule.

5. The regulations of this paragraph apply to all owners and operators subject to the requirements of Rule 1200-01-11-.07(1)(b)9, when the Agency issues either a post-closure permit or an enforceable document (as defined in Rule 1200-01-11-.07(1)(b)9) at the facility. When the Agency issues an enforceable document, references in this paragraph to “in the permit” mean “in the enforceable document.”

6. The Commissioner may replace all or part of the requirements of subparagraphs (6)(b) through (6)(k) of this Rule applying to a regulated unit with alternative requirements for groundwater monitoring and corrective action for releases to groundwater set out in the permit (or in an enforceable document) (as defined in Rule 1200-01-11-.07(1)(b)9) where the Commissioner determines that:

(i) The 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 groundwater monitoring and corrective action requirements of subparagraphs (6)(b) through (6)(k) of this Rule because alternative requirements will protect human health and the environment.

(b) Required Programs [40 CFR 264.91]

1. Owners and operators subject to this subpart must conduct a monitoring and response program as follows:

   (i) Whenever hazardous constituents under subparagraph (d) of this paragraph from a regulated unit are detected at a compliance point under subparagraph (f) of this paragraph, the owner or operator must institute a compliance monitoring program under subparagraph (j) of this paragraph. Detected is defined as statistically significant evidence of contamination as described in part (i)6 of this paragraph;

   (ii) Whenever the ground-water protection standard under subparagraph (c) of this paragraph is exceeded, the owner or operator must institute a corrective action program under subparagraph (k) of this paragraph. Exceeded is defined as statistically significant evidence of increased contamination as described in part (j)4 of this paragraph;

   (iii) Whenever hazardous constituents under subparagraph (d) of this paragraph from a regulated unit exceed concentration limits under subparagraph (e) of this paragraph in ground water between the compliance point under subparagraph (f) of this paragraph and the downgradient facility property boundary, the owner or operator must institute a corrective action program under subparagraph (k) of this paragraph; or

   (iv) In all other cases, the owner or operator must institute a detection monitoring program under subparagraph (i) of this paragraph.

2. The Commissioner will specify in the facility permit the specific elements of the monitoring and response program. The Commissioner may include one or more of the programs identified in part 1 of this subparagraph in the facility permit as may be necessary to protect human health and the environment and will specify the circumstances under which each of the programs will be required. In deciding whether to require the owner or operator to be prepared to institute a particular program, the Commissioner will consider the potential adverse effects on human health and the environment that might occur before final administrative action on a permit modification application to incorporate such a program could be taken.

(c) Ground-water Protection Standard [40 CFR 264.92]

The owner or operator must comply with conditions specified in the facility permit that are designed to ensure that hazardous constituents under subparagraph (d) of this paragraph detected in the ground water from a regulated unit do not exceed the concentration limits under subparagraph (e) of this paragraph in the uppermost aquifer underlying the waste management area beyond the point of compliance under subparagraph (f) of this paragraph during the compliance period under subparagraph (g) of this paragraph. The Commissioner will establish this ground-water protection standard in the facility permit when hazardous constituents have been detected in the ground water.

(d) Hazardous Constituents [40 CFR 264.93]

1. The Commissioner will specify in the facility permit the hazardous constituents to which the ground-water protection standard of subparagraph (c) of this paragraph applies. Hazardous constituents are constituents identified in Appendix VIII of Rule 1200-01-11-.02(5) that have been detected in ground water in the uppermost aquifer underlying a regulated unit and that are reasonably

expected to be in or derived from waste contained in a regulated unit, unless the Commissioner has excluded them under part 2 of this subparagraph.

2. The Commissioner will exclude an Appendix VIII constituent from the list of hazardous constituents specified in the facility permit if he finds that the constituent is not capable of posing a substantial present or potential hazard to human health or the environment. In deciding whether to grant an exemption, the Commissioner will consider the following:

(i) Potential adverse effects on ground-water quality, considering:

(I) The physical and chemical characteristics of the waste in the regulated unit, including its potential for migration;

(II) The hydrogeological characteristics of the facility and surrounding land;

(III) The quantity of ground water and the direction of ground-water flow;

(IV) The proximity and withdrawal rates of ground-water users;

(V) The current and future uses of ground water in the area;

(VI) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground-water quality;

(VII) The potential for health risks caused by human exposure to waste constituents;

(VIII) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;

(IX) The persistence and permanence of the potential adverse effects; and

(ii) Potential adverse effects on hydraulically-connected surface water quality, considering:

(I) The volume and physical and chemical characteristics of the waste in the regulated unit;

(II) The hydrogeological characteristics of the facility and surrounding land;

(III) The quantity and quality of ground water, and the direction of ground-water flow;

(IV) The patterns of rainfall in the region;

(V) The proximity of the regulated unit to surface waters;

(VI) The current and future uses of surface waters in the area and any water quality standards established for those surface waters;

(VII) The existing quality of surface water, including other sources of contamination and the cumulative impact on surface-water quality;

(VIII) The potential for health risks caused by human exposure to waste constituents;

(IX) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

(X) The persistence and permanence of the potential adverse effects.

3. In making any determination under part 2 of this subparagraph about the use of ground water in the area around the facility, the Commissioner will consider any identification of underground sources of drinking water and exempted aquifers made under 40 CFR 144.8 or Tennessee Rule Chapter 1200-4-6.

(e) Concentration Limits [40 CFR 264.94]

1. The Commissioner will specify in the facility permit concentration limits in the ground water for hazardous constituents established under subparagraph (d) of this paragraph. The concentration of a hazardous constituent:

(i) Must not exceed the background level of that constituent in the ground water at the time that limit is specified in the permit; or

(ii) For any of the constituents listed in Table 1, must not exceed the respective value given in that table if the background level of the constituent is below the value given in Table 1; or

Table 1 -- Maximum Concentration of Constituents for Ground-water Protection

Constituent	Maximum Concentration[1]
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium	0.05
Lead	0.05
Mercury	0.002
Selenium	0.01
Silver	0.05
Endrin (1,2,3,4,10,10-hexachloro-1,7-epoxy-1,4,4a,5,6,7,8,9a-octahydro-1, 4-endo, endo-5,8-dimethano naphthalene)	0.0002
Lindane (1,2,3,4,5,6-hexachlorocyclohexane, gamma	0.004

isomer)	
Methoxychlor (1,1,1-Trichloro-2,2-bis (p-methoxyphenylethane)	0.1
Toxaphene ($C_{10}H_{10}Cl_6$, Technical chlorinated camphene, 67-69 percent chlorine)	0.005
2,4-D (2,4-Dichlorophenoxyacetic acid)	0.1
2,4,5-TP Silvex (2,4,5-Trichlorophenoxypropionic acid)	0.01

FOOTNOTE: [1]Milligrams per liter.

(iii) Must not exceed an alternate limit established by the Commissioner under part 2 of this subparagraph.

2. The Commissioner will establish an alternate concentration limit for a hazardous constituent if he finds that the constituent will not pose a substantial present or potential hazard to human health or the environment as long as the alternate concentration limit is not exceeded. In establishing alternate concentration limits, the Commissioner will consider the following factors:

(i) Potential adverse effects on ground-water quality, considering:

(I) The physical and chemical characteristics of the waste in the regulated unit, including its potential for migration;

(II) The hydrogeological characteristics of the facility and surrounding land;

(III) The quantity of ground water and the direction of ground-water flow;

(IV) The proximity and withdrawal rates of ground-water users;

(V) The current and future uses of ground water in the area;

(VI) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground-water quality;

(VII) The potential for health risks caused by human exposure to waste constituents;

(VIII) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;

(IX) The persistence and permanence of the potential adverse effects; and

(ii) Potential adverse effects on hydraulically-connected surface-water quality, considering:

(I) The volume and physical and chemical characteristics of the waste in the regulated unit;

(II) The hydrogeological characteristics of the facility and surrounding land;

(III) The quantity and quality of ground water, and the direction of ground-water flow;

(IV) The patterns of rainfall in the region;

(V) The proximity of the regulated unit to surface waters;

(VI) The current and future uses of surface waters in the area and any water quality standards established for those surface waters;

(VII) The existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality;

(VIII) The potential for health risks caused by human exposure to waste constituents;

(IX) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

(X) The persistence and permanence of the potential adverse effects.

3. In making any determination under part 2 of this subparagraph about the use of ground water in the area around the facility the Commissioner will consider any identification of underground sources of drinking water and exempted aquifers made under 40 CFR 144.8 or Tennessee Rule Chapter 1200-4-6.

(f) Point of Compliance [40 CFR 264.95]

1. The Commissioner will specify in the facility permit the point of compliance at which the ground-water protection standard of subparagraph (c) of this paragraph applies and at which monitoring must be conducted. The point of compliance is a vertical surface located at the hydraulically downgradient limit of the waste management area that extends down into the uppermost aquifer underlying the regulated units.

2. The waste management area is the limit projected in the horizontal plane of the area on which waste will be placed during the active life of a regulated unit.

(i) The waste management area includes horizontal space taken up by any liner, dike, or other barrier designed to contain waste in a regulated unit.

(ii) If the facility contains more than one regulated unit, the waste management area is described by an imaginary line circumscribing the several regulated units.

(g) Compliance Period [40 CFR 264.96]

1. The Commissioner will specify in the facility permit the compliance period during which the ground-water protection standard of subparagraph (c) of this paragraph applies. The compliance period is the number of years equal to the active life of the waste management area (including any waste management activity prior to permitting, and the closure period).

2. The compliance period begins when the owner or operator initiates a compliance monitoring program meeting the requirements of subparagraph (j) of this paragraph.

3. If the owner or operator is engaged in a corrective action program at the end of the compliance period specified in part 1 of this subparagraph, the compliance period is extended until the owner or operator can demonstrate that the ground-water protection standard of subparagraph (c) of this paragraph has not been exceeded for a period of three consecutive years.

(h) General Ground-water Monitoring Requirements [40 CFR 264.97]

The owner or operator must comply with the following requirements for any ground-water monitoring program developed to satisfy subparagraph (i),(j), or (k) of this paragraph:

1. The ground-water monitoring system must consist of a sufficient number of wells, installed at appropriate locations and depths to yield ground-water samples from the uppermost aquifer that:

   (i) Represent the quality of background ground water that has not been affected by leakage from a regulated unit;

      (I) A determination of background ground-water quality may include sampling of wells that are not hydraulically upgradient of the waste management area where:

         I. Hydrogeologic conditions do not allow the owner or operator to determine what wells are hydraulically upgradient; and

         II. Sampling at other wells will provide an indication of background ground-water quality that is representative or more representative than that provided by the upgradient wells; and

   (ii) Represent the quality of ground water passing the point of compliance.

   (iii) Allow for the detection of contamination when hazardous waste or hazardous constituents have migrated from the waste management area to the uppermost aquifer.

2. If a facility contains more than one regulated unit, separate ground-water monitoring systems are not required for each regulated unit provided that provisions for sampling the ground water in the uppermost aquifer will enable detection and measurement at the compliance point of hazardous constituents from the regulated units that have entered the ground water in the uppermost aquifer.

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 collection of ground-water samples. The annular space (i.e., the space between the bore hole and well casing) above the sampling depth must be sealed to prevent contamination of samples and the ground water.

4. The ground-water monitoring program must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide a reliable indication of ground-water quality below the waste management area. At a minimum the program must include procedures and techniques for:

   (i) Sample collection;

   (ii) Sample preservation and shipment;

   (iii) Analytical procedures; and

   (iv) Chain of custody control.

5. The ground-water monitoring program must include sampling and analytical methods that are appropriate for ground-water sampling and that accurately measure hazardous constituents in ground-water samples.

6. The ground-water monitoring program must include a determination of the ground-water surface elevation each time ground water is sampled.

7. In detection monitoring or where appropriate in compliance monitoring, data on each hazardous constituent specified in the permit will be collected from background wells and wells at the compliance point(s). The number and kinds of samples collected to establish background shall be appropriate for the form of statistical test employed, following generally accepted statistical principles. The sample size shall be as large as necessary to ensure with reasonable confidence that a contaminant release to ground water from a facility will be detected. The owner or operator will determine an appropriate sampling procedure and interval for each hazardous constituent listed in the facility permit which shall be specified in the unit permit upon approval by the Commissioner. This sampling procedure shall be:

   (i) A sequence of at least four samples, taken at an interval that assures, to the greatest extent technically feasible, that an independent sample is obtained, by reference to the uppermost aquifer's effective porosity, hydraulic conductivity, and hydraulic gradient, and the fate and transport characteristics of the potential contaminants, or

   (ii) an alternate sampling procedure proposed by the owner or operator and approved by the Commissioner.

8. The owner or operator will specify one of the following statistical methods to be used in evaluating ground-water monitoring data for each hazardous constituent which, upon approval by the Commissioner, will be specified in the unit permit. The statistical test chosen shall be conducted separately for each hazardous constituent in each well. Where practical quantification limits (pql's) are used in any of the following statistical procedures to comply with subpart (h)9(v) of this paragraph, the pql must be proposed by the owner or operator and approved by the Commissioner. Use of any of the following statistical methods must be

protective of human health and the environment and must comply with the performance standards outlined in part (h)9 of this paragraph.

(i) A parametric analysis of variance (ANOVA) followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's mean and the background mean levels for each constituent.

(ii) An analysis of variance (ANOVA) based on ranks followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's median and the background median levels for each constituent.

(iii) A tolerance or prediction interval procedure in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit.

(iv) A control chart approach that gives control limits for each constituent.

(v) Another statistical test method submitted by the owner or operator and approved by the Commissioner.

9. Any statistical method chosen under subparagraph (h)8 of this paragraph for specification in the unit permit shall comply with the following performance standards, as appropriate:

(i) The statistical method used to evaluate ground-water monitoring data shall be appropriate for the distribution of chemical parameters or hazardous constituents. If the distribution of the chemical parameters or hazardous constituents is shown by the owner or operator to be inappropriate for a normal theory test, then the data should be transformed or a distribution-free theory test should be used. If the distributions for the constituents differ, more than one statistical method may be needed.

(ii) If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentrations or a ground-water protection standard, the test shall be done at a Type I error level no less than 0.01 for each testing period. If a multiple comparisons procedure is used, the Type I experimentwise error rate for each testing period shall be no less than 0.05; however, the Type I error of no less than 0.01 for individual well comparisons must be maintained. This performance standard does not apply to tolerance intervals, prediction intervals or control charts.

(iii) If a control chart approach is used to evaluate ground-water monitoring data, the specific type of control chart and its associated parameter values shall be proposed by the owner or operator and approved by the Commissioner if he or she finds it to be protective of human health and the environment.

(iv) If a tolerance interval or a prediction interval is used to evaluate groundwater monitoring data, the levels of confidence and, for tolerance

intervals, the percentage of the population that the interval must contain, shall be proposed by the owner or operator and approved by the Commissioner if he or she finds these parameters to be protective of human health and the environment. These parameters will be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.

(v) The statistical method shall account for data below the limit of detection with one or more statistical procedures that are protective of human health and the environment. Any practical quantification limit (pql) approved by the Commissioner under part (h)8 of this paragraph that is used in the statistical method shall be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility.

(vi) If necessary, the statistical method shall include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.

10. Ground-water monitoring data collected in accordance with part 7 of this subparagraph including actual levels of constituents must be maintained in the facility operating record. The Commissioner will specify in the permit when the data must be submitted for review.

(i) Detection Monitoring Program [40 CFR 264.98]

An owner or operator required to establish a detection monitoring program under this subpart must, at a minimum, discharge the following responsibilities:

1. The owner or operator must monitor for indicator parameters (e.g., specific conductance, total organic carbon, or total organic halogen), waste constituents, or reaction products that provide a reliable indication of the presence of hazardous constituents in ground water. The Commissioner will specify the parameters or constituents to be monitored in the facility permit, after considering the following factors:

(i) The types, quantities, and concentrations of constituents in wastes managed at the regulated unit;

(ii) The mobility, stability, and persistence of waste constituents or their reaction products in the unsaturated zone beneath the waste management area;

(iii) The detectability of indicator parameters, waste constituents, and reaction products in ground water; and

(iv) The concentrations or values and coefficients of variation of proposed monitoring parameters or constituents in the ground-water background.

2. The owner or operator must install a ground-water monitoring system at the compliance point as specified under subparagraph (f) of this paragraph. The ground-water monitoring system must comply with subpart (h)1(ii) and parts (h)2 and 3 of this paragraph.

3. The owner or operator must conduct a ground-water monitoring program for each chemical parameter and hazardous constituent specified in the permit pursuant to part 1 of this subparagraph in accordance with part (h)7 of this paragraph. The owner or operator must maintain a record of ground-water analytical data as measured and in a form necessary for the determination of statistical significance under part (h)8 of this paragraph.

4. The Commissioner will specify the frequencies for collecting samples and conducting statistical tests to determine whether there is statistically significant evidence of contamination for any parameter or hazardous constituent specified in the permit conditions under part 1 of this subparagraph in accordance with part (h)7 of this paragraph.

5. The owner or operator must determine the ground-water flow rate and direction in the uppermost aquifer at least annually.

6. The owner or operator must determine whether there is statistically significant evidence of contamination for any chemical parameter of hazardous constituent specified in the permit pursuant to part 1 of this subparagraph at a frequency specified under part 4 of this subparagraph.

   (i) In determining whether statistically significant evidence of contamination exists, the owner or operator must use the method(s) specified in the permit under part (h)8 of this paragraph. These method(s) must compare data collected at the compliance point(s) to the background ground-water quality data.

   (ii) The owner or operator must determine whether there is statistically significant evidence of contamination at each monitoring well as the compliance point within a reasonable period of time after completion of sampling. The Commissioner will specify in the facility permit what period of time is reasonable, after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of ground-water samples.

7. If the owner or operator determines pursuant to part 6 of this subparagraph that there is statistically significant evidence of contamination for chemical parameters or hazardous constituents specified pursuant to part 1 of this subparagraph at any monitoring well at the compliance point, he or she must:

   (i) Notify the Division Director of this finding in writing within seven days. The notification must indicate what chemical parameters or hazardous constituents have shown statistically significant evidence of contamination;

   (ii) Immediately sample the ground water in all monitoring wells and determine whether constituents in the list of Appendix IX in paragraph (57) of this Rule are present, and if so, in what concentration. However, the Commissioner, on a discretionary basis, may allow sampling for a site-specific subset of constituents from the Appendix IX list in paragraph (57) of this Rule and other representative/related waste constituents;

   (iii) For any Appendix IX compounds found in the analysis pursuant to subpart (ii) of this part, the owner or operator may resample within one month or at an alternative site-specific schedule approved by the Commissioner and repeat the analysis for those compounds detected. If the results of the second analysis confirm the initial results, then these

constituents will form the basis for compliance monitoring. If the owner or operator does not resample for the compounds found pursuant to subpart (ii) of this part, the hazardous constituents found during this initial Appendix IX analysis will form the basis for compliance monitoring;

(iv) Within 90 days, submit to the Division Director an application for a permit modification to establish a compliance monitoring program meeting the requirements of subparagraph (j) of this paragraph. The application must include the following information:

(I) An identification of the concentration of any Appendix IX constituent detected in the ground water at each monitoring well at the compliance point;

(II) Any proposed changes to the ground-water monitoring system at the facility necessary to meet the requirements of subparagraph (j) of this paragraph;

(III) Any proposed additions or changes to the monitoring frequency, sampling and analysis procedures or methods, or statistical methods used at the facility necessary to meet the requirements of subparagraph (j) of this paragraph;

(IV) For each hazardous constituent detected at the compliance point, a proposed concentration limit under subpart (e)1(i) or (ii) of this paragraph, or a notice of intent to seek an alternate concentration limit under part (e)2 of this paragraph;

(v) Within 180 days, submit to the Division Director:

(I) All data necessary to justify an alternate concentration limit sought under part (e)2 of this paragraph; and

(II) An engineering feasibility plan for a corrective action program necessary to meet the requirement of subparagraph (k) of this paragraph, unless:

I. All hazardous constituents identified under subpart (ii) of this part are listed in Table 1 of subparagraph (e) of this paragraph and their concentrations do not exceed the respective values given in that Table; or

II. The owner or operator has sought an alternate concentration limit under part (e)2 of this paragraph for every hazardous constituent identified under subpart (ii) of this part;

(vi) If the owner or operator determines, pursuant to part 6 of this subparagraph, that there is a statistically significant difference for chemical parameters or hazardous constituents specified pursuant to part 1 of this subparagraph at any monitoring well at the compliance point, he or she may demonstrate that a source other than a regulated unit caused the contamination or that the detection is an artifact caused by an error in sampling, analysis, or statistical evaluation or natural variation in the ground water. The owner or operator may make a demonstration under this part in addition to, or in lieu of, submitting a

permit modification application under subpart (iv) of this part; however, the owner or operator is not relieved of the requirement to submit a permit modification application within the time specified in subpart (iv) of this part unless the demonstration made under this part successfully shows that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation. In making a demonstration under this part, the owner or operator must:

(I) Notify the Division Director in writing within seven days of determining statistically significant evidence of contamination at the compliance point that he intends to make a demonstration under this part;

(III) Within 90 days, submit a report to the Division Director which demonstrates that a source other than a regulated unit caused the contamination or that the contamination resulted from error in sampling, analysis, or evaluation;

(III) Within 90 days, submit to the Division Director an application for a permit modification to make any appropriate changes to the detection monitoring program facility; and

(IV) Continue to monitor in accordance with the detection monitoring program established under this subparagraph.

8. If the owner or operator determines that the detection monitoring program no longer satisfies the requirements of this subparagraph, he or she must, within 90 days, submit an application for a permit modification to make any appropriate changes to the program.

(j) Compliance Monitoring Program [40 CFR 264.99]

An owner or operator required to establish a compliance monitoring program under this paragraph must, at a minimum, discharge the following responsibilities:

1. The owner or operator must monitor the ground water to determine whether regulated units are in compliance with the ground-water protection standard under subparagraph (c) of this paragraph. The Commissioner will specify the ground-water protection standard in the facility permit, including:

(i) A list of the hazardous constituents identified under subparagraph (d) of this paragraph;

(ii) Concentration limits under subparagraph (e) of this paragraph for each of those hazardous constituents;

(iii) The compliance point under subparagraph (f) of this paragraph; and

(iv) The compliance period under subparagraph (g) of this paragraph.

2. The owner or operator must install a ground-water monitoring system at the compliance point as specified under subparagraph (f) of this paragraph. The ground-water monitoring system must comply with subpart (h)1(ii) and parts (h)2 and 3 of this paragraph.

3. The Commissioner will specify the sampling procedures and statistical methods appropriate for the constituents and the facility, consistent with parts (h)7 and 8 of this paragraph.

   (i) The owner or operator must conduct a sampling program for each chemical parameter or hazardous constituent in accordance with part (h)7 of this paragraph.

   (ii) The owner or operator must record ground-water analytical data as measured and in form necessary for the determination of statistical significance under part (h)8 of this paragraph for the compliance period of the facility.

4. The owner or operator must determine whether there is statistically significant evidence of increased contamination for any chemical parameter or hazardous constituent specified in the permit, pursuant to part 1 of this subparagraph, at a frequency specified under part 6 of this subparagraph.

   (i) In determining whether statistically significant evidence of increased contamination exists, the owner or operator must use the method(s) specified in the permit under part (h)8 of this paragraph. The methods(s) must compare data collected at the compliance point(s) to a concentration limit developed in accordance with subparagraph (e) of this paragraph.

   (ii) The owner or operator must determine whether there is statistically significant evidence of increased contamination at each monitoring well at the compliance point within a reasonable time period after completion of sampling. The Commissioner will specify that time period in the facility permit, after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of ground-water samples.

5. The owner or operator must determine the ground-water flow rate and direction in the uppermost aquifer at least annually.

6. The Commissioner will specify the frequencies for collecting samples and conducting statistical tests to determine statistically significant evidence of increased contamination in accordance with part (h)7 of this paragraph.

7. Annually, the owner or operator must determine whether additional hazardous constituents from Appendix IX of paragraph (57) of this Rule could possibly be present but are not on the detection monitoring list in the permit, are actually present in the uppermost aquifer and, if so, at what concentration, pursuant to procedures in part (6)(i)6 of this Rule. To accomplish this, the owner or operator must consult with the Commissioner to determine on a case-by-case basis: which sample collection event during the year will involve enhanced sampling; the number of monitoring wells at the compliance point to undergo enhanced sampling; the number of samples to be collected from each of these monitoring wells; and, the specific constituents from Appendix IX of paragraph (57) of this Rule for which these samples must be analyzed. If the enhanced sampling event indicates that Appendix IX constituents are present in the ground-water that are not already identified in the permit as monitoring constituents, the owner or operator may resample within one month or at an alternative site-specific

schedule approved by the Commissioner, and repeat the analysis. If the second analysis confirms the presence of new constituents, the owner or operator must report the concentration of these additional constituents to the Division Director within seven days after the completion of the second analysis and add them to the monitoring list. If the owner or operator chooses not to resample, then he or she must report the concentrations of these additional constituents to the Division Director within seven days after completion of the initial analysis and add them to the monitoring list.

8. If the owner or operator determines pursuant to part 4 of this subparagraph that any concentration limits under subparagraph (e) of this paragraph are being exceeded at any monitoring well at the point of compliance he or she must:

   (i) Notify the Commissioner of this finding in writing within seven days. The notification must indicate what concentration limits have been exceeded.

   (ii) Submit to the Commissioner an application for a permit modification to establish a corrective action program meeting the requirements of subparagraph (k) of this paragraph within 180 days, or within 90 days if an engineering feasibility study has been previously submitted to the Commissioner under subpart (i)7(v) of this paragraph. The application must at a minimum include the following information:

      (I) A detailed description of corrective actions that will achieve compliance with the ground-water protection standard specified in the permit under part 1 of this subparagraph; and

      (II) A plan for a ground-water monitoring program that will demonstrate the effectiveness of the corrective action. Such a ground-water monitoring program may be based on a compliance monitoring program developed to meet the requirements of this subparagraph.

9. If the owner or operator determines, pursuant to part 4 of this subparagraph, that the ground-water concentration limits under subparagraph (e) of this paragraph are being exceeded at any monitoring well at the point of compliance, he or she may demonstrate that a source other than a regulated unit caused the contamination or that the detection is an artifact caused by an error in sampling, analysis, or statistical evaluation or natural variation in the ground water. In making a demonstration under this part, the owner or operator must:

   (i) Notify the Commissioner in writing within seven days that he intends to make a demonstration under this part;

   (ii) Within 90 days, submit a report to the Commissioner which demonstrates that a source other than a regulated unit caused the standard to be exceeded or that the apparent noncompliance with the standards resulted from error in sampling, analysis, or evaluation;

   (iii) Within 90 days, submit to the Commissioner an application for a permit modification to make any appropriate changes to the compliance monitoring program at the facility; and

   (iv) Continue to monitor in accord with the compliance monitoring program established under this subparagraph.

10. If the owner or operator determines that the compliance monitoring program no longer satisfies the requirements of this section, he must, within 90 days, submit an application for a permit modification to make any appropriate changes to the program.

(k) Corrective Action Program [40 CFR 264.100]

An owner or operator required to establish a corrective action program under this subpart must, at a minimum, discharge the following responsibilities:

1. The owner or operator must take corrective action to ensure that regulated units are in compliance with the ground-water protection standard under subparagraph (c) of this paragraph. The Commissioner will specify the ground-water protection standard in the facility permit, including:

   (i) A list of the hazardous constituents identified under subparagraph (d) of this paragraph;

   (ii) Concentration limits under subparagraph (e) of this paragraph for each of those hazardous constituents;

   (iii) The compliance point under subparagraph (f) of this paragraph; and

   (iv) The compliance period under subparagraph (g) of this paragraph.

2. The owner or operator must implement a corrective action program that prevents hazardous constituents from exceeding their respective concentration limits at the compliance point by removing the hazardous waste constituents or treating them in place. The permit will specify the specific measures that will be taken.

3. The owner or operator must begin corrective action within a reasonable time period after the ground-water protection standard is exceeded. The Commissioner will specify that time period in the facility permit. If a facility permit includes a corrective action program in addition to a compliance monitoring program, the permit will specify when the corrective action will begin and such a requirement will operate in lieu of subpart (j)9(ii) of this paragraph.

4. In conjunction with a corrective action program, the owner or operator must establish and implement a ground-water monitoring program to demonstrate the effectiveness of the corrective action program. Such a monitoring program may be based on the requirements for a compliance monitoring program under subparagraph (j) of this paragraph and must be as effective as that program in determining compliance with the ground-water protection standard under subparagraph (c) of this paragraph and in determining the success of a corrective action program under part 5 of this subparagraph, where appropriate.

5. In addition to the other requirements of this subparagraph, the owner or operator must conduct a corrective action program to remove or treat in place any hazardous constituents under subparagraph (d) of this paragraph that exceed concentration limits under subparagraph (e) of this paragraph in groundwater:

   (i) Between the compliance point under subparagraph (f) of this paragraph and the downgradient property boundary; and

   (ii) Beyond the facility boundary, where necessary to protect human health and the environment, unless the owner or operator demonstrates to the

satisfaction of the Commissioner that, despite the owner's or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such action. The owner/operator is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis.

(iii) Corrective action measures under this part must be initiated and completed within a reasonable period of time considering the extent of contamination.

(iv) Corrective action measures under this part may be terminated once the concentration of hazardous constituents under subparagraph (d) of this paragraph is reduced to levels below their respective concentration limits under subparagraph (e) of this paragraph.

6. The owner or operator must continue corrective action measures during the compliance period to the extent necessary to ensure that the ground-water protection standard is not exceeded. If the owner or operator is conducting corrective action at the end of the compliance period, he must continue that corrective action for as long as necessary to achieve compliance with the ground-water protection standard. The owner or operator may terminate corrective action measures taken beyond the period equal to the active life of the waste management area (including the closure period) if he can demonstrate, based on data from the ground-water monitoring program under part 4 of this subparagraph, that the ground-water protection standard of subparagraph (c) of this paragraph has not been exceeded for a period of three consecutive years.

7. The owner or operator must report in writing to the Commissioner on the effectiveness of the corrective action program. The owner or operator must submit these reports annually.

8. If the owner or operator determines that the corrective action program no longer satisfies the requirements of this subparagraph, he must, within 90 days, submit an application for a permit modification to make any appropriate changes to the program.

(l) Corrective Action For Solid Waste Management Units [40 CFR 264.101]

1. The owner or operator of a facility seeking a permit for the treatment, storage or disposal of hazardous waste must institute corrective action as necessary to protect human health and the environment for all releases of hazardous waste or constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in such unit.

2. Corrective action will be specified in the permit in accordance with this subparagraph and paragraph (22) of this Rule. The permit will contain schedules of compliance for such corrective action (where such corrective action cannot be completed prior to issuance of the permit) and assurances of financial responsibility for completing such corrective action.

3. The owner or operator must implement corrective actions beyond the facility property boundary, where necessary to protect human health and the environment, unless the owner or operator demonstrates to the satisfaction of the Commissioner that, despite the owner's or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such

actions. The owner/operator is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis. Assurances of financial responsibility for such corrective action must be provided.

4. This subparagraph does not apply to remediation waste management sites unless they are part of a facility subject to a permit for treating, storing or disposing of hazardous wastes that are not remediation wastes.

(7) Closure and Post-Closure [40 CFR 264 Subpart G]

(a) Applicability [40 CFR 264.110]

Except as subparagraphs (1)(b) and (1)(d) of this Rule provide 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 from which the owner or operator intends to remove the wastes at closure to the extent that these sections are made applicable to such facilities in subparagraphs (11)(i) or (12)(i) of this Rule;

(iii) Tank systems that are required under subparagraph (10)(h) of this Rule to meet the requirements for landfills; and

(iv) Containment buildings that are required under subparagraph (33)(c) of this Rule to meet the requirement for landfills.

3. The Commissioner may replace all or part of the requirements of this paragraph (and the unit-specific standards referenced in part (b)3 of this paragraph applying to a regulated unit), with alternative requirements set out in a permit or in an enforceable document (as defined in Rule 1200-01-11-.07(1)(b)9), where the Commissioner determines that:

(i) The 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 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 264.111]

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 paragraph, including, but not limited to, the requirements of subparagraphs (9)(i), (10)(h), (11)(i), (12)(i), (13)(k), (14)(k), (15)(l), paragraphs (16) and (17), and subparagraphs (27)(b)-(d) and (33)(c).

(c) Closure Plan; Amendment of Plan [40 CFR 264.112]

1. Written Plan

(i) The owner or operator of a hazardous waste management facility must have a written closure plan. In addition, certain surface impoundments and waste piles from which the owner or operator intends to remove or decontaminate the hazardous waste at partial or final closure are required by items (11)(i)3(i)(I) and (12)(i)3(i)(I) of this Rule to have contingent closure plans. The plan must be submitted with the permit application, in accordance with Rule 1200-01-11-.07(5)(a)13, and approved by the Commissioner as part of the permit issuance procedures under Rule 1200-01-11-.07(7). In accordance with Rule 1200-01-11-.07(8)(b), the approved closure plan will become a condition of the permit.

(ii) The Commissioner's approval of the plan must ensure that the approved closure plan is consistent with subparagraphs (7)(b)-(f) of this paragraph and the applicable requirements of paragraph (6), subparagraphs (9)(i), (10)(h), (11)(i), (12)(i), (13)(k), (14)(k), (15)(h), paragraphs (16) and (17) and subparagraphs (27)(b) and (33)(c). Until final closure is completed and certified in accordance with subparagraph (f) of this paragraph, a copy of the approved plan and all approved revisions must be furnished to the Commissioner upon request, including requests by mail.

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 operations 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 closures and final closure, including, but not limited to, methods for removing, transporting, treating, storing, or disposing of all hazardous wastes, and identification of the type(s) of the

off-site hazardous waste management units 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 required to satisfy the closure performance standard; and

(v) A detailed description of other activities necessary during the closure period 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) For facilities that are expected to close prior to the expiration of the permit, an estimate of the expected year of final closure; and

(viii) Construction drawings showing details of the final cover (if any) necessary to ensure that the applicable closure requirements of this Rule will be accomplished.

(ix) For facilities where the Commissioner has applied alternative requirements at a regulated unit under parts (6)(a)6, (7)(a)3, and/or (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 must submit a written notification of or request for a permit modification to authorize a change in operating plans, facility design, or the approved closure plan in accordance with the applicable procedures in Rule 1200-01-11-.07(9). The written notification or request must include four (4) copies of the amended closure plan for review or approval by the Commissioner.

(i) The owner or operator may submit a written notification or request to the Commissioner for a permit modification to amend the closure plan at any time prior to the notification of partial or final closure of the facility.

(ii) The owner or operator must submit a written notification of or request for a permit modification to authorize a change in the approved 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 approved closure plan.

(IV) The owner or operator requests the Commissioner to apply alternative requirements to a regulated unit under parts (6)(a)6, (7)(a)3, and/or (8)(a)4 of this Rule.

(iii) The owner or operator must submit a written request for a permit modification including at least four (4) copies of the amended closure plan for approval 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 request a permit modification no later than 30 days after the unexpected event. An owner or operator of a surface impoundment or waste pile that intends to remove all hazardous waste at closure and is not otherwise required to prepare a contingent closure plan under items (11)(i)3(i)(I) or (12)(i)3(i)(I) of this Rule must submit at least four (4) copies of an amended closure plan to the Commissioner no later than 60 days from the date that the owner or operator or Commissioner determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of subparagraph (14)(k) of this Rule, or no later than 30 days from that date if the determination is made during partial or final closure. The Commissioner will approve, disapprove, or modify this amended plan in accordance with the procedures in Rule 1200-01-11-.07. In accordance with Rule 1200-01-11-.07(8)(b), the approved closure plan will become a condition of any permit issued.

(iv) The Commissioner may request modifications to the plan under the conditions described in subpart (ii) of this part. The owner or operator must submit the modified plan within 60 days of the Commissioner's request, or within 30 days if the change in facility conditions occurs during partial or final closure. Any modifications requested by the Commissioner will be approved in accordance with the procedures in Rule 1200-01-11-.07.

4. Notification of Partial Closure and Final Closure

(i) The owner or operator 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, land treatment or landfill unit, or final closure of a facility with such a unit. The owner or operator 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 treatment or storage tanks, container storage, or incinerator units to be closed. The owner or operator 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, whichever is earlier.

(ii) The date when he "expects to begin closure" must be either:

(I) No later than 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 wastes. 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 all steps to prevent threats to human health and the environment, including compliance with all applicable permit 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 non-hazardous wastes, or if there is a reasonable possibility that the hazardous waste management unit will receive additional non-hazardous wastes, no later than one year after the date on which the unit received the most recent volume of non-hazardous wastes. If the owner or operator can demonstrate to the Commissioner that the hazardous waste management unit has the capacity to receive additional non-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 applicable permit requirements, the Commissioner may approve an extension to this one-year limit.

(iii) If the facility's permit is terminated, or if the facility is otherwise ordered, by judicial decree or final order under T.C.A. §68-212-111, to cease receiving hazardous wastes or to close, then the requirements of this part do not apply. However, the owner or operator must close the facility in accordance with the deadlines established in subparagraph (d) of this paragraph.

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 264.113]

1. Within 90 days after receiving the final volume of hazardous wastes, or the final volume of non-hazardous 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, 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 complies with all applicable requirements for requesting a modification to the permit and 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 owner or operator complies with parts 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 permit 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 non-hazardous 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. The Commissioner may approve an extension to the closure period if the owner or operator complies with all applicable requirements for requesting a modification to the permit and 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 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 permit 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 only 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 requests a permit modification in compliance with all applicable requirements in Rule 1200-01-11-.07 and in the permit modification request 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 permit requirements; and

(ii) The request to modify the permit 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 request to modify the permit includes revisions, as necessary and appropriate, to affected conditions of the permit to account for the receipt of non-hazardous wastes following receipt of the final volume of hazardous wastes; and

(iv) The request to modify the permit and the demonstrations referred to in subparts (i) and (ii) of this part are submitted to the Commissioner no later than 120 days prior to the date on which the owner or operator of the facility receives the known final volume of hazardous wastes at the unit, 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 request to modify the permit:

(I) A contingent corrective measures plan, unless a corrective action plan has already been submitted under subparagraph (6)(j) of this Rule; 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) over background values for detection monitoring parameters or constituents specified in the permit or that exceeds the facility's ground-water protection standard at the point of compliance, if applicable, 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 continue to 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 the 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 ground-water protection standard or background levels if the facility has not yet established a ground-water protection standard.

(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 he shall:

(I) Notify the owner or operator in writing that the owner or operator must begin closure in accordance with the deadlines in parts 1 and 2 of this subparagraph and provide a detailed statement of reasons for this determination, and

(II) 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 264.114]

During the partial and final closure periods, all contaminated equipment, structures and soils must be properly disposed of or decontaminated unless otherwise specified in subparagraphs (10)(h), (11)(i), (12)(i), (13)(k), (14)(k), (27)(b) or (27)(d) of this Rule. By removing any 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 waste in accordance with all applicable requirements of Rule 1200-01-11-.03.

(f) Certification of Closure [40 CFR 264.115]

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 the 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 Registered Professional Engineer as defined in Rule 1200-01-11-.01(2)(a). Documentation supporting the qualified Registered 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)4 of this Rule.

(g) Survey Plat [40 CFR 264.116]

No later than the submission of the 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 4 copies of a survey plat 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 264.117]

1. (i) Post-closure care for each hazardous waste management unit subject to the requirements of subparagraphs (h)-(k) of this paragraph must begin after completion of closure of the unit and continue for 30 years after that date and must consist of at least the following:

(I) Monitoring and reporting in accordance with the requirements of paragraphs (6), (11), (12), (13), (14) and (27) of this Rule; and

(II) Maintenance and monitoring of waste containment systems in accordance with the requirements of paragraphs (6), (11), (12), (13), (14) and (27) of this Rule.

(ii) Any time preceding partial 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 unit, the Commissioner may, in accordance with the permit modification procedures in Rule 1200-01-11-.07:

(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 wastes, 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 264.118]

1. Written Plan

   The owner or operator of a hazardous waste disposal unit must have a written post-closure plan. In addition, certain surface impoundments and waste piles from which the owner or operator intends to remove or decontaminate the hazardous wastes at partial or final closure are required by items (11)(i)3(i)(II) and (12)(i)3(i)(II) of this Rule to have contingent post-closure plans. Owners or operators of surface impoundments and waste piles not otherwise required to prepare contingent post-closure plans under items (11)(i)3(i)(II) and (12)(i)3(i)(II) of this Rule must submit a post-closure plan to the Commissioner within 90 days from the date that the owner or operator or Commissioner determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of subparagraphs (h) through (k) of this paragraph. The plan must be submitted with the permit application, in accordance with Rule 1200-01-11-.07(5)(a)1(xiii), and approved by the Commissioner as part of the permit issuance procedures under Rule 1200-01-11-.07(7). In accordance with Rule 1200-01-11-.07(8)(b), the approved post-closure plan will become a condition of the permit issued.

2. 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), (14) and (27) 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 (6), (11), (12), (13), (14) and (27) of this Rule; and

(II) The function of the monitoring equipment in accordance with the requirements of paragraphs (6), (11), (12), (13), (14) and (27) 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 where the Commissioner has applied alternative requirements at a regulated unit under parts (6)(a)6, (7)(a)3, and/or (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.

3. Until final closure of the facility, four (4) copies of the approved post-closure plan must be furnished to the Commissioner upon request, including request by mail. After final closure has been certified, the person or office specified in subpart 2(iii) of this subparagraph must keep the approved post-closure plan during the remainder of the post-closure period.

4. Amendment of Plan

The owner or operator must submit a written notification of or request for a permit modification to authorize a change in the approved post-closure plan in accordance with the applicable requirements of Rule 1200-01-11-.07. The written notification or request must include 4 copies of the amended post-closure plan for review or approval by the Commissioner.

(i) The owner or operator may submit a written notification or request to the Commissioner for a permit modification to amend the post-closure plan at any time during the active life of the facility or during the post-closure care period.

(ii) The owner or operator must submit a written notification of or request for a permit modification to authorize a change in the approved post-closure plan whenever:

(I) Changes in operating plans or facility design affect the approved post-closure plan, or

(II) There is a change in the expected year of final closure, if applicable, or

(III) Events which occur during the active life of the facility, including partial and final closures, affect the approved post-closure plan.

(IV) The owner or operator requests the Commissioner to apply alternative requirements to a regulated unit under parts (6)(a)6, (7)(a)3, and/or (8)(a)4 of this Rule.

(iii) The owner or operator must submit a written request for a permit modification 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. An owner or operator of a surface impoundment or waste pile that intends to remove all hazardous waste at closure and is not otherwise required to submit a contingent post-closure plan under items (11)(i)3(i)(II) and (12)(i)3(i)(II) of this Rule must submit a post-closure plan to the Commissioner no later than 90 days after the date that the owner or operator or Commissioner determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of subparagraph (14)(k) of this paragraph. The Commissioner will approve, disapprove or modify this plan in accordance with the procedures in Rule 1200-01-11-.07. In accordance with Rule 1200-01-11-.07(8)(b), the approved post-closure plan will become a permit condition.

(iv) The Commissioner may request modifications to the plan under the conditions described in subpart (ii) of this part. The owner or operator must submit the modified plan no later than 60 days after the Commissioner's request, or no later than 90 days if the unit is a surface impoundment or waste pile not previously required to prepare a contingent post-closure plan. Any modifications requested by the Commissioner will be approved, disapproved, or modified in accordance with the procedures in Rule 1200-01-11-.07.

(j) Post-closure Notices [40 CFR 264.119]

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 4 copies of 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 March 2, 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 this Rule; 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) and part (j)1 of this paragraph 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, including 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 or operator of the land upon which a hazardous waste disposal unit is located wishes to remove hazardous wastes and hazardous waste residues, the liner, if any, contaminated soils, he must request a modification to the post-closure permit in accordance with the applicable requirements of Rule 1200-01-11-.07. 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 Rule Chapter 1200-01-11. If he is granted a permit modification or otherwise granted approval to conduct such 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 264.120]

No later than 60 days after 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 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 post-closure care under part (8)(f)4 of this Rule.

(8) Financial Requirements [40 CFR 264 Subpart H]

(a) Applicability [40 CFR 264.140]

1. The requirements of subparagraphs (c), (d), (g), (h), (i) and (k) through (p) apply to owners and 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), (f), and (j) of this paragraph apply only to owners and operators of:

(i) Disposal facilities;

(ii) Piles, and surface impoundments from which the owner or operator intends to remove the wastes at closure, to the extent that these sections

are made applicable to such facilities by subparagraphs (11)(i) and (12)(i) of this Rule;

(iii) Tank systems that are required under subparagraph (10)(h) of this Rule to meet the requirements for landfills; and

(iv) Containment buildings that are required under subparagraph (33)(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)6. Part (f)6 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(1)(b)9), where the Commissioner:

(i) Prescribes alternative requirements for the regulated unit under parts (6)(a)6 and/or (7)(a)3 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 Used in This Paragraph [40 CFR 264.141]

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)-(k) of this Rule.

7. The following terms are used in the specifications for the financial tests for financial assurance 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 1200-4-6-.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 practices, 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 264.142]

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)-(f) of this Rule and applicable closure requirements in subparagraphs (9)(i), (10)(h), (11)(i), (12)(i), (13)(k), (14)(k), (15)(l), (27)(b) through (27)(d) and (33)(c) and paragraphs (16) and (17) 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 at 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)8(v) of this paragraph. The adjustment may be made by recalculating the maximum costs of closure 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 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. Such cost estimates must be itemized and address all closure activities.

(d) Financial Assurance For Closure

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 or she 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. An owner or operator of a new facility must file the financial assurance instrument(s) before the permit can be issued or as may otherwise be directed by the Commissioner. In any case, the financial assurance must be effective before the date on which hazardous waste is first received for treatment, storage, or disposal.

4. 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 5 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 accomplished 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 Commissioner 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.

5. The Commissioner or Board 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 264.144]

1. The owner or operator of a disposal surface impoundment, disposal miscellaneous unit, land treatment unit, or landfill unit, or of a surface impoundment or waste pile required under parts (11)(i) and (12)(i) of this Rule to prepare a contingent closure and post-closure plan, 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)-(k), (11)(i), (12)(i), (13)(k), (14)(k) and (27)(d) 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 a 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 cost estimate must be updated for inflation within 30 days after the close of the firm's fiscal year and before the submission of updated information to the Division Director as specified in subpart (g)8(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 within 30 days after the Commissioner has approved the request to modify the post-closure 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) Financial Assurance for Post-closure Care

The owner or operator of a hazardous waste management unit subject to the requirements of subparagraph (c) of this paragraph must establish financial assurance for post-closure care in accordance with the approved post-closure plan for the facility and 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 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. An owner or operator of a facility must file the financial assurance instrument(s) before the permit can be issued or as may otherwise be directed by the Commissioner. In any case, the financial assurance must be effective before the date on which hazardous waste is first received for disposal.

4. The financial assurance must be maintained until the Commissioner releases the owner or operator from the requirements of this subparagraph, as specified in this part, or until the Commissioner orders forfeiture of the financial assurance as provided in part 5 of this subparagraph.

(i) Release of the owner or operator from the requirement of this subparagraph

Within 60 days after receiving certifications from the owner or operator and a qualified Professional Engineer that 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 by this subparagraph 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 Commissioner 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 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.

5. The Commissioner may order that any financial assurance filed by an owner or operator pursuant to this subparagraph be forfeited to the State if the Commissioner 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.

6. 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 of Financial Assurance [40 CFR 264.143 and 264.145]

1. 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 establishing a closure and/or post-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. An owner or operator of a new facility must submit the 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 subpart (p)1(i) of this paragraph, and the trust agreement must be accompanied by a formal certification of acknowledgment (for example, see subpart (p)1(ii) of this paragraph). 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 term of the initial permit 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) For a new facility, the first payment must be made before the initial receipt of hazardous waste for treatment, storage, or disposal. A receipt from the trustee for this payment must be

submitted by the owner or operator to the Division Director before this initial receipt of hazardous waste. The first payment must be at least equal to the current closure cost estimate, except as provided in subparagraph (h) of this paragraph, divided by the number of years in the pay-in period. 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:

$$Next\ payment = \frac{CE - CV}{Y}$$

where CE is the current closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(II) If an owner or operator establishes a trust fund as specified in Rule 1200-01-11-.05(8)(g)1, and the value of that trust fund is less than the current closure and/or post-closure care cost estimate when a permit is awarded for the facility, the amount of the current closure and/or post-closure care cost estimate still to be paid into the trust fund must be paid in over the pay-in period as defined in subpart (iii) of this part. Payments must continue to be made no later than 30 days after each anniversary date of the first payment made pursuant to Rule 1200-01-11-.05. The amount of each payment must be determined by this formula:

$$Next\ payment = \frac{CE - CV}{Y}$$

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 trust fund after having used one or more alternate mechanisms specified in this paragraph or in Rule 1200-01-11-.05(8)(g), 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 according to specifications of this part and Rule 1200-01-11-.05(8)(g)1, as applicable.

(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 subparts (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 and/or post-closure care 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. Within 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 the owner or operator with 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 parts (d)4 and/or (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. An owner or operator of a new facility must submit 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 part (p)2 of this paragraph.

(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 part (p)1 of this paragraph) 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 a 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 cost 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. Surety Bond Guaranteeing Performance of Closure and/or Post-closure

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. An owner or operator of a new facility must submit 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 part (p)3 of this paragraph.

(iii) The bond must guarantee that the owner or operator will:

(I) Perform final closure in accordance with the closure plan and other requirements of the permit for the facility whenever required to do so and/or perform post-closure care in accordance with the post-closure care plan and other requirements of the permit for the facility; or

(II) Provide alternate financial assurance as specified in this section, 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.

(iv) 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. Following a final determination by the Commissioner that the

owner or operator has failed to so perform, under the terms of the bond the surety will perform final closure and/or post-closure care as guaranteed by the bond or will forfeit the amount of the penal sum, as provided in parts (d)5 and or (f)5 of this paragraph as directed by the Commissioner.

(v) The penal sum of the bond must be in an amount at least equal to the current closure cost estimate.

(vi) Whenever the current closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Division Director, or obtain other financial assurance as specified in this paragraph. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate following written approval by the Division Director.

(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. The Commissioner will provide such written consent 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) of this paragraph.

(ix) The surety will not be liable for deficiencies in the performance of closure by the owner or operator after 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 Letter of Credit

An owner or operator may satisfy the requirements of subparagraphs (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. An owner or operator of a new facility must submit the letter of credit 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 part (p)4 of this paragraph.

(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)5 and (f)5 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 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.

5. Closure and/or Post-closure 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. An owner or operator of a new facility must submit the certificate of insurance to the Division Director.

(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 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 insurance policy must be accompanied by a certificate of insurance whose wording is identical to the wording specified in part (p)5 of this paragraph. The wording of the policy itself is subject to the review and approval of the Commissioner prior to acceptance as a financial assurance mechanism.

(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 perform closure and/or post-closure care may request reimbursement 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 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 expenditures are in accordance with the approved closure and/or post-closure plan or otherwise justified. If the Division Director has reason to believe that the maximum cost of closure and/or post-closure 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 he financial assurance requirement as provided in part (d)4 and/or (f)4 of this paragraph. If the Division Director does not instruct the insurer to make such reimbursements, he will provide the owner or operator with a detailed written statement of reasons.

(vi) Upon forfeiture of financial assurance as provided in parts (d)5 and (f)5 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) The permit is terminated or revoked or a new permit is denied; 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 parts (d)4 and/or (f)4 of this paragraph.

6. Personal Bond Supported by Securities

An owner or operator may satisfy the requirements of subparagraphs (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 the permit for the facility whenever required to do so, and/or guarantee to perform post-closure care in accordance with the post-closure plan and other requirements of the permit for the facility. The wording of the personal bond supported by securities must be identical to the wording specified in part (p)15 of this paragraph. 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.

7. Personal Bond Supported by Cash

An owner or operator may satisfy the requirements of subparagraphs (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 the permit for the facility whenever required to do so, and/or guarantee to perform post-closure care in accordance with the post-closure plan and other requirements of the permit for the facility.

8. Financial Test and Corporate Guarantee for Closure and/or Post-closure Care

(i) An owner or operator may satisfy the requirements of subparagraph (d) and/or (f) of this paragraph by demonstrating that he passes a financial test as specified in this part. The same document (with appropriate wording modifications) may be used by a company, with prior approval by the Commissioner, to demonstrate Financial Assurance for a solid waste unit and a hazardous waste unit, both of which are owned/operated by the company. 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 1-4 of the letter from the owner's or operator's chief financial officer (part (p)6 of this paragraph). 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 1-4 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 1200-4-6).

(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 part (p)6 of this paragraph; 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) An owner or operator of a new facility must submit the items specified in subpart (iii) of this part to the Division Director at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal.

(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 Division Director 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 Division Director 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 releases the owner or operator from the requirements of this paragraph in accordance with parts (d)4 and/or (f)4 of this paragraph.

(x) An owner or operator may meet the requirements of subparagraph (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 subparts (i) through (viii) of this part and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in part (p)8 of this paragraph. The certified copy of the corporate 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 corporate 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 corporate guarantee. The terms of the corporate guarantee must provide that:

(I) If the owner or operator fails to perform final closure and/or post-closure of a facility covered by the corporate guarantee in accordance with the closure plan and other permit 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)5 and/or (f)5 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 alternative 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 guaranteeing payment into a trust fund, letters of credit, insurance, and personal bonds supported by securities or cash. The mechanisms must be as specified in parts 1,2,4,5,6 and 7, respectively, of 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 and/or post-closure cost 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 this subparagraph (g) of this paragraph to meet the requirements of subparagraphs (d) and/or (f) of this paragraph for more than one facility he owns and operates in Tennessee. 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 and/or post-closure care 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)5 and/or (f)5 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 264.146]

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. However, the existing financial assurance shall not be released by the Commissioner 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 to order forfeiture of the financial assurance filed to guarantee such performance.

4. The Commissioner shall order forfeiture of the financial assurance upon his or her validation of the Division Director's determinations and upon his or her determination that the procedures of this subparagraph have been followed. The Commissioner may however, at his or her 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 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 within the Tennessee Environmental Protection Fund for use by the Commissioner as set forth in T.C.A. Sections 68-212-108(c)(6) of the Act and 68-203-101 et seq.

(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 264.147]

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 subparts (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 part (p)9 of this paragraph. The wording of the certificate of insurance must be identical to the wording specified in part (p)10 of this paragraph. 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. An owner or operator of a new facility must submit the signed duplicate original of the Hazardous Waste Facility Liability Endorsement or the Certificate of Liability Insurance to the Division Director at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste.

(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. The same document (with appropriate wording modifications) may be used by a company, with prior approval by the Commissioner, to demonstrate liability coverage and closure/post-closure financial assurance for a solid waste unit (as appropriate) and a hazardous waste unit, both of which are owned/operated by the company.

(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, land treatment facility, or disposal miscellaneous unit that 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 subparts (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 part (p)9 of this paragraph. The wording of the certificate of insurance must be identical to the wording specified in part (p)10 of this paragraph. 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. An owner or operator of a new facility must submit the signed duplicate original of the Hazardous Waste Facility Liability Endorsement or the Certificate of Liability Insurance to the Division Director at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste.

(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. The same document (with appropriate wording modifications) may be used by a company, with prior approval by the Commissioner, to demonstrate liability coverage and closure/post-closure financial assurance for a solid waste unit (as appropriate) and a hazardous waste unit, both of which are owned/operated by the company.

(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 amount 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 parts 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 to the Commissioner as part of the application under Rule 1200-01-11-.07(5) for a facility that does not have a permit, or pursuant to the procedures for permit modification under Rule 1200-01-11-.07(9)(c) for a facility that has a permit. 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. Any request for a variance for a permitted facility will be treated as a request for a permit modification under Rule 1200-01-11-.07(9)(c)2 and 3(xiii).

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. Any adjustment of the level or type of coverage for a facility that has a permit will be treated as a permit modification under Rule 1200-01-11-.07(9)(c)2 and 3(xiii).

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 section 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 part (p)7 of this paragraph. If an owner or operator is using the financial test to demonstrate both assurance for closure or post-closure care, as specified by subparagraphs (d) and (f) and part (g)8 of this paragraph and Rule 1200-01-11-.05(8)(d) and (f) and (g)7, and liability coverage, he must submit the letter specified in part (p)7 of this paragraph to cover both forms of financial responsibility; a separate letter as specified in part (p)6 of this paragraph 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) An owner or operator of a new facility must submit the items specified in subpart (iii) of this part to the Division Director at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal.

(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 by 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 subparts (p)8(ii) of this paragraph. 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, other than a Tennessee Corporation, 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 subpart (p)8(ii) of this paragraph 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

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 Division Director that a guarantee executed as described in this part and subpart (p)8(ii) of this paragraph 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 subparagraph 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 part (p)11 of this paragraph.

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 part (p)12 of this paragraph.

(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 part (p)12 of this paragraph 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 part (p)13 of this paragraph.

11. (Reserved) [40 CFR 264.147(k)]

(o) Incapacity of Owners or Operators, Guarantors, or Financial Institutions [40 CFR 264.148]

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)8 of this paragraph must make such a notification if he is named as debtor, as required under the terms of the corporate guarantee (part (p)8 of this paragraph).

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.

(p) Wording of the Instruments

The wording of the financial instruments listed below must be as follows or otherwise approved for use by the Commissioner:
(Note: See Table of Contents for Page Numbers.)

1. Trust Agreement for a Trust Fund
2. Surety Bond Guaranteeing Payment into a Trust Fund
3. Surety Bond Guaranteeing Performance of Closure and/or Post-closure Care
4. Irrevocable Standby Letter of Credit (For Closure and/or Post-closure Requirements)
5. Certificate of Insurance for Closure and/or Post-closure
6. Letter from Chief Financial Officer (For Closure and/or Post-closure Costs Only)
7. Letter from Chief Financial Officer (For Closure and/or Post-closure Care and Liability Coverage)
8. (i) Corporate Guarantee for Closure or Post-closure
   (ii) Guarantee for Liability Coverage
9. Hazardous Waste Facility Liability Endorsement
10. Hazardous Waste Facility Certificate of Liability Insurance
11. Irrevocable Standby Letter of Credit (For Liability Requirements)
12. Payment Bond (Surety Bond)
13. (i) Trust Agreement
    (ii) Certification of Acknowledgement
14. (i) Standby Trust Agreement
    (ii) Certification of Acknowledgement
15. Personal Bond Supported by Securities
16. *Combined Hazardous and Solid Waste Financial Test
    (i) Letter From Chief Financial Officer (Closure and/or Post-closure)
    (ii) Letter From Chief Financial officer (Liability Coverage or Liability Coverage and Closure/Post-closure)
    (iii) Corporate Guarantee for Closure or Post-closure Care

* Note: Copies of the three financial instrument forms listed above may be obtained by calling the Financial Assurance Office of the Division of Solid Waste Management at 615-532-0780 or writing to :

Attn: Financial Assurance Office
Tennessee Department of Environment & Conservation
Division of Solid Waste Management
L & C Tower, 5th Floor
401 Church Street
Nashville, TN 37243-1535

INSTRUMENT WORDING

1. TRUST AGREEMENT

(i) A trust agreement for a trust fund, as specified in part (g)1 of this paragraph or Rule 1200-01-11-.05(8)(g)1, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

TRUST AGREEMENT

Trust Agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator], a [name of State] [insert "corporation," "partnership," "association," or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert "incorporated in the State of _____" or "a national bank"], the "Trustee."

Whereas, the Tennessee Department of Environment and Conservation (TDEC), an agency of the State of Tennessee, has established certain regulations applicable to the Grantor, requiring that an owner or operator of a hazardous waste management facility shall provide assurance that funds will be available when needed for closure and/or post-closure care of the facility,

Whereas, the Grantor has elected to establish a trust to provide all or part of such financial assurance for the facilities identified herein,

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee,

Now, Therefore, the Grantor and the Trustee agree as follows:

SECTION 1
DEFINITIONS

As used in this Agreement:

(I) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(II) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

SECTION 2
IDENTIFICATION OF FACILITIES AND COST ESTIMATES

This Agreement pertains to the facilities and cost estimates identified on attached Schedule A [on Schedule A, for each facility list the EPA Identification Number, name, address, and the current closure and/or post-closure cost estimates, or portions thereof, for which financial assurance is demonstrated by this Agreement].

SECTION 3
ESTABLISHMENT OF FUND

The Grantor and the Trustee hereby establish a trust fund, the "Fund," for the benefit of TDEC. The Grantor and the Trustee intend that no third party have access to the Fund

except as herein provided. The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. Such property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by TDEC.

SECTION 4
PAYMENT FOR CLOSURE AND POST-CLOSURE CARE

The Trustee shall make payments from the Fund as the Commissioner of TDEC shall direct, in writing, to provide for the payment of the costs of closure and/or post-closure care of the facilities covered by this Agreement. The Trustee shall reimburse the Grantor or other persons as specified by the Commissioner of TDEC from the Fund for closure and post-closure expenditures in such amounts as the Commissioner of TDEC shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the Commissioner of TDEC specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

SECTION 5
PAYMENTS COMPRISING THE FUND

Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

SECTION 6
TRUSTEE MANAGEMENT

The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(I) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2.(a), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government;

(II) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or State government; and

(III) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

SECTION 7

COMMINGLING AND INVESTMENT

The Trustee is expressly authorized in its discretion:

(I) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(II) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

SECTION 8
EXPRESS POWERS OF TRUSTEE

Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(I) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(II) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(III) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depositary even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depositary with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(IV) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and

(V) To compromise or otherwise adjust all claims in favor of or against the Fund.

SECTION 9
TAXES AND EXPENSES

All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust,

including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

SECTION 10
ANNUAL VALUATION

The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the Commissioner of TDEC a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the Commissioner of TDEC shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

SECTION 11
ADVICE OF COUNSEL

The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

SECTION 12
TRUSTEE COMPENSATION

The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

SECTION 13.
SUCCESSOR TRUSTEE.

The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the Commissioner of TDEC, and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this SECTION shall be paid as provided in SECTION 9.

SECTION 14
INSTRUCTIONS TO THE TRUSTEE

All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendment to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the Commissioner of

TDEC to the Trustee shall be in writing, signed by the Commissioner of TDEC, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or TDEC hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or TDEC, except as provided for herein.

SECTION 15
NOTICE OF NONPAYMENT

The Trustee shall notify the Grantor and the Commissioner, by certified mail within 10 days following the expiration of the 30-day period after the anniversary of the establishment of the Trust, if no payment is received from the Grantor during that period. After the pay-in period is completed, the Trustee shall not be required to send a notice of nonpayment.

SECTION 16
AMENDMENT OF AGREEMENT

This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Commissioner of TDEC, or by the Trustee and the Commissioner of TDEC if the Grantor ceases to exist.

SECTION 17
IRREVOCABILITY AND TERMINATION

Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Commissioner of TDEC, or by the Trustee and the Commissioner of TDEC, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

SECTION 18
IMMUNITY AND INDEMNIFICATION

The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the Commissioner of TDEC issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

SECTION 19
CHOICE OF LAW

This Agreement shall be administered, construed, and enforced according to the laws of the State of [insert name of State].

SECTION 20
INTERPRETATION

As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness Whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written: The parties below certify that the wording of this Agreement is identical to the wording specified in Tennessee Rule 1200-01-11-.06(8)(p)1 as such regulations were constituted on the date first above written.

[Signature of Grantor]_____

[Title]_____

Attest:_____

[Title]_____

[Seal]

[Signature of Trustee]_____

Attest:_____

[Title]_____

[Seal]

(ii) The following is an example of the certification of acknowledgment which must accompany the trust agreement for a trust fund as specified in part (g)1 of this paragraph or Rule 1200-01-11-.05(8)(g)1.

State of _____

County of _____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

Subscribed and sworn to before me this _____day of _____, ____

_____

Notary Public

My commission expires on the _____day of _____, _____

* * * * * * * * * * * *

2. SURETY BOND – FINANCIAL GUARANTEE BOND

A surety bond guaranteeing payment into a trust fund, as specified in Rule 1200-01-11-.05(8)(g)2 or part (g)2 of this paragraph, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

FINANCIAL GUARANTEE BOND

Date bond executed:_____

Effective date:_____

Principal: [legal name and business address of owner or operator]_____
_____

_____

Type of Organization: [insert "individual," "joint venture," "partnership," or "corporation"]__
_____

State of incorporation: _____

Surety(ies): [name(s) and business address(es)]_____
_____
_____

EPA Identification Number, name, address and closure and/or post-closure amount(s) for each facility guaranteed by this bond [indicate closure and post-closure amounts separately]: _____
_____

Total penal sum of bond:
$_____

Surety's bond
number:_____
___

Know All Persons By These Presents, That we, the Principal and Surety(ies) hereto are firmly bound to the Tennessee Department of Environment and Conservation (hereinafter called Department), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said Principal is required, under the Tennessee Hazardous Waste Management Act as amended (THWMA), to have a permit or interim status in order to own or operate each hazardous waste management facility identified above, and

Whereas said Principal is required to provide financial assurance for closure, or closure and post-closure care, as a condition of the permit or interim status, and

Whereas said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, Therefore, the conditions of the obligation are such that if the Principal shall faithfully, before the beginning of final closure of each facility identified above, fund the standby trust fund in the amount(s) identified above for the facility,

Or, if the Principal shall fund the standby trust fund in such amount(s) within 15 days after a final order to begin closure is issued by the Commissioner of the Tennessee Department of Environment and Conservation, the Tennessee Solid Waste Disposal Control Board, or a court of competent jurisdiction,

Or, if the Principal shall provide alternate financial assurance, as specified in Tennessee Rule 1200-01-11-.05(8) or Rule 1200-01-11-.06(8), as applicable, and obtain the Director of the Department's Division of Solid Waste Management (hereinafter called Division Director) written approval of such assurance, within 90 days after the date notice of cancellation is received by both the Principal and the Division Director from the Surety(ies), then this obligation shall be null and void; otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above. Upon notification by the Division Director that the Principal has failed to perform as guaranteed by this bond, the Surety(ies) shall place funds in the amount guaranteed for the facility(ies) into the standby trust fund as directed by the Division Director.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Division Director, provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by both the Principal and the Division Director, as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the Surety(ies), provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the Division Director.

(The following paragraph is an optional rider that may be included but is not required.)

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new closure and/or post-closure amount, provided that the penal sum does not increase by more than 20 percent in any one year, and no decrease in the penal sum takes place without the written permission of the Division Director.

In Witness Whereof, the Principal and Surety(ies) have executed this Financial Guarantee Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in Tennessee Rule 1200-01-11-.06(8)(p)2 as such regulations were constituted on the date this bond was executed.

Principal

[Signature(s)] _____

[Name(s)] _____

[Title(s)]_____

[Corporate seal]

Corporate Surety(ies)

[Name and address]_____
_____

State of incorporation:_____

Liability limit: $ _____

[Signature(s)]_____

[Name(s) and title(s)]_____

[Corporate seal]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]

Bond premium: $ _____

* * * * * * * * * * * *

3. PERFORMANCE BOND

A surety bond guaranteeing performance of closure and/or post-closure care, as specified in part (g)3 of this paragraph, must be worded as follows, except that the instructions in parentheses are to be replaced with the relevant information and the parentheses deleted:

PERFORMANCE BOND

Date bond executed:_____

Effective date:_____

Principal: (legal name and business address of owner or operator)_____

_____

Type of organization: (insert “individual,” “joint venture,” “partnership,” or “corporation”) _____

_____

State of incorporation:_____

Surety(ies): (Name(s) and business address(es))_____

_____

Facilities Covered (EPA Identification Number, name, address, and closure and/or post-closure amount(s) for each facility guaranteed by this bond (indicate closure and post-closure amounts separately)):_____
_____
_____

Total penal sum of bond: $_____

Surety's bond number:_____

KNOW ALL PERSONS BY THESE PRESENTS, That we, the Principal and Surety(ies) hereto are firmly bound to the Tennessee Department of Environment and Conservation (hereinafter called Department), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

WHEREAS said Principal is required, under the Tennessee Hazardous Waste Management Act as amended (THWMA), to have a permit in order to own or operate each hazardous waste management facility identified above, and

WHEREAS said Principal is required to provide financial assurance for closure, or closure and post-closure care, as a condition of the permit;

NOW, THEREFORE, the conditions of this obligation are such that if the Principal shall faithfully perform closure, whenever required to do so, of each facility for which this bond guarantees closure, in accordance with the closure plan and other requirements of the permit as such plan and permit may be amended, pursuant to all applicable laws, statutes, rules, and regulations, as such laws, statutes, rules, and regulations may be amended,

AND, if the Principal shall faithfully perform post-closure care of each facility for which this bond guarantees post-closure care, in accordance with the post-closure plan and other requirements of the permit, as such plan and permit may be amended, pursuant to all applicable laws, statutes, rules, and regulations, as such laws, statutes, rules, and regulations may be amended,

OR, if the Principal shall provide alternate financial assurance as specified in Department Rule 1200-01-11-.06(8), and obtain the written approval of such assurance from the Director of the Department's Division of Solid Waste Management (hereinafter called Division Director), within 90 days after the date notice of cancellation is received by both the Principal and the Division Director from the Surety(ies), then this obligation shall be null and void, otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by the Division Director that the principal has been found in violation of the closure requirements of Department Rule 1200-01-11-.06, for a facility for which this bond guarantees performance of closure, the Surety(ies) shall either perform closure in accordance with the closure plan and other permit requirements or forfeit the closure amount guaranteed for the facility to the Department as directed by the Division Director.

Upon notification by the Division Director that the Principal has been found in violation of the post-closure requirements of Department Rule 1200-01-11-.06 for a facility for which this bond guarantees performance of post-closure care, the Surety(ies) shall either perform post-closure care in accordance with the post-closure plan and other permit requirements or forfeit the post-closure amount guaranteed for the facility to the Department as directed by the Division Director.

Upon notification by the Division Director that the Principal has failed to provide alternate financial assurance as specified in Department Rule 1200-01-11-.06(8), and obtain written approval of such assurance from the Division Director during the 90 days following receipt by both the Principal and the Division Director of a notice of cancellation of this bond, the Surety(ies) shall forfeit funds in the amount guaranteed for the facility(ies) to the Department as directed by the Division Director.

The Surety(ies) hereby waive(s) notification of amendments to closure plans, permits, applicable laws, statutes, rules, and regulations and agrees that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of this bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the principal (owner or operator) and to the Division Director, provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the

notice of cancellation by both the Principal and the Division Director, as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the Surety(ies), provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of this bond by the Division Director.

(The following paragraph is an optional rider that may be included but is not required.)

Principal and Surety(ies) hereby agrees to adjust the penal sum of the bond yearly so that it guarantees a new closure and/or post-closure amount, provided that the penal sum does not increase by more than 20 percent in any one year, and no decrease in the penal sum takes place without the written permission of the Division Director.

IN WITNESS WHEREOF, the Principal and Surety(ies) have executed this PERFORMANCE BOND and have affixed their seals on the date (s) set forth below.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in Department Rule 1200-01-11-.06(8)(p)3 as such regulation was constituted on the date (s) this bond was executed.

PRINCIPAL

(Signature(s))_____

(Name(s))_____

(Title(s))_____

(Corporate seal)

CORPORATE SURETY(IES)

(Name and address)_____

_____

State of incorporation:_____

Liability limit: $_____

(Signature(s))_____

(Name(s) and title(s))_____

_____

(Corporate seal)

(For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.)_____

_____

Bond premium: $_____

* * * * * * * * * * * *

4. IRREVOCABLE STANDBY LETTER OF CREDIT

A letter of credit, as specified in part (g)4 of this paragraph or Rule 1200-01-11-.05(8)(g)3, must be worded as follows, except that instructions in parentheses are to be replaced with the relevant information and the parentheses deleted:

IRREVOCABLE STANDBY LETTER OF CREDIT

Director
Division of Solid Waste Management
Tennessee Department of Environment and Conservation

Dear Sir or Madam:

We hereby establish our Irrevocable Standby Letter of Credit No. _____ in your favor, at the request and for the account of (owner's or operator's name and address) up to the aggregate amount of (in words) U.S. dollars $_____, available upon presentation of

(i) your sight draft, bearing reference to this letter of credit No. _____, and

(ii) your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of the Tennessee Hazardous Waste Management Act, as amended."

This letter of credit is effective as of (date) and shall expire on (date at least 1 year later), but such expiration date shall be automatically extended for a period of (at least 1 year) on (date) and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify both you and (owner's or operator's name) by certified mail that we have decided not to extend this letter of credit beyond the current expiration date. In the event you are so notified, any unused portion of the credit shall be available upon presentation of your sight draft for 120 days after the date of receipt by both you and (owner's or operator's name), as shown on the signed return receipts.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us, and we shall forfeit the amount of the draft to the State of Tennessee in accordance with your instructions.

We certify that the wording of this letter of credit is identical to the wording specified in Tennessee Rule 1200-01-11-.06(8)(p)4 as such regulations were constituted on the date shown immediately below.

(Signature(s))_____

(Name(s))_____

(Title(s))_____

(Corporate seal)

(Date)_____

This credit is subject to (insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce," or "the Uniform Commercial Code").

* * * * * * * * * * * *

5. CERTIFICATE OF INSURANCE FOR CLOSURE OR POST-CLOSURE CARE

A certificate of insurance, as specified in part (g)5 of this paragraph or Rule 1200-01-11-.05(8)(g)4, must be worded as follows, except that instructions in parentheses are to be replaced with the relevant information and the parentheses deleted:

CERTIFICATE OF INSURANCE FOR CLOSURE OR POST-CLOSURE CARE

Name and Address of Insurer (herein called the "Insurer"):_____

_____

Name and Address of Insured (herein called the "Insured"):_____

_____

Facilities Covered:(List for each facility: The EPA Identification Number, name, address, and the amount of insurance for closure and/or the amount for post-closure care (these amounts for all facilities covered must total the face amount shown below):_____

_____

_____

Face Amount:_____

Policy Number:_____

Effective Date:_____

The Insurer hereby certifies that it has issued to the Insured the policy of insurance identified above to provide financial assurance for (insert "closure" or "closure and post-closure care" or "post-closure care") for the facilities identified above. The Insurer further warrants that such policy conforms in all respects with the requirements of State Rules 1200-01-11-.05(8)(g)4 and 1200-01-11-.06(8)(g)5, as applicable and as such regulations were constituted on the date shown immediately below. It is agreed that any provision of the policy inconsistent with such regulations is hereby amended to eliminate such inconsistency.

Whenever requested by the Director of the Division of Solid Waste Management of the Tennessee Department of Environment and Conservation, the Insurer agrees to furnish to the Division Director a duplicate original of the policy listed above, including all endorsements thereon.

I hereby certify that the wording of this certificate is identical to the wording specified in Tennessee Rule 1200-01-11-.06(8)(p)5 as such regulations were constituted on the date shown immediately below.

(Authorized signature for Insurer)_____

(Name of person signing)_____

(Title of person signing)
_____

Subscribed and sworn to before me this _____day of _____, ____

_____
Notary Public

My commission expires on the _____day of _____, _____

* * * * * * * * * * * *

6. LETTER FROM CHIEF FINANCIAL OFFICER

A letter from the chief financial officer, as specified in Rule 1200-01-11-.05(8)(g)7 or Rule 1200-01-11-.06(8)(g)8 must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

[Address to Division Director]

I am the chief financial officer of [name and address of firm]. This letter is in support of this firm's use of the financial test to demonstrate financial assurance for closure and/or post-closure costs, as specified in paragraph (8) of Rules 1200-01-11-.05 and .06.

(Fill out the following five paragraphs regarding facilities and associated cost estimates. If your firm has no facilities that belong in a particular paragraph, write "None" in the space indicated.

For each facility, include its Installation Identification Number, name, address, and current closure and/or post-closure cost estimates. Identify each cost estimate as to whether it is for closure or post-closure care.)

(i) This firm is the owner or operator of the following facilities for which financial assurance for which financial assurance for closure or post-closure care is demonstrated through the financial test specified in paragraph (8) of Rules 1200-01-11-.05 and .06. The current closure and/or post-closure cost estimates covered by the test are shown for each facility: _____.

(ii) This firm guarantees, through the guarantee specified in paragraph (8) of Rules 1200-01-11-.05 and .06, the closure or post-closure care of the following facilities owned or operated by the guaranteed party. The current cost estimates for the closure or post-closure care so guaranteed are shown for each facility:_____. The firm identified above is [insert one or more: (1) The direct or higher-tier parent corporation of the owner or operator; (2) owned by the same parent corporation as the parent corporation of the owner or operator, and receiving the following value in consideration of this guarantee _____; or (3) engaged in the following substantial relationship with the owner or operator _____, and receiving the following value in consideration of this guarantee _____]. (Attach a written description of the business relationship or a copy of the contract establishing such relationship to this letter.)

(iii) In States other than Tennessee, this firm, as owner or operator or guarantor, is demonstrating financial assurance for the closure or post-closure care of the following facilities through the use of a test equivalent or substantially equivalent to the financial test specified in paragraph (8) of Rules 1200-01-11-.05 and .06. The current closure and/or post-closure cost estimates covered by such a test are shown for each facility:_____.

(iv) This firm is the owner or operator of the following hazardous waste management facilities for which financial assurance for closure or, if a disposal facility, post-closure care, is not demonstrated either to the Department, another State, or the U.S. Environmental Protection Agency (EPA) through the financial test or any other financial assurance mechanism specified in paragraph (8) of Rules 1200-01-11-.05 and .06 or equivalent or substantially equivalent State mechanisms. The current closure and/or post-closure cost estimates not covered by such financial assurance are shown for each facility:_____

(v) This firm is the owner or operator of the following UIC facilities for which financial assurance for plugging and abandonment is required under 40 CFR part 144. The current closure cost estimates as required by 40 CFR 144.62 are shown for each facility:_____

This firm [insert "is required" or "is not required"] to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on [month, day]. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended [date].

(Fill in Alternative I if the criteria of Rule 1200-01-11-.05(8)(g)7(i)(I) or Rule 1200-01-11-.06(g)8(i)(I) are used. Fill in Alternative II if the criteria of Rule 1200-01-11-.05(8)(g)7(i)(II) or Rule 1200-01-11-.06(8)(g)8(i)(II) are used.)

Alternative I

1. Sum of current closure and post-closure cost estimate (total of all cost estimates shown in the five paragraphs above) $_____
*2. Total liabilities (if any portion of your closure or post-closure cost estimates is included in your total liabilities, you may deduct the amount of that portion from this line and add that amount to lines 3 and 4) $_____
*3. Tangible net worth $_____
*4. Net worth $_____
*5. Current assets $_____
*6. Current liabilities $_____
7. Net working capital (line 5 minus line 6) $_____
*8. The sum of net income plus depreciation, depletion, and amortization $_____
*9. Total assets in U.S. (required only if less than 90% of firm's assets are located in the U.S.) $_____
10. Is line 3 at least $10 million? (Yes/No) _____
11. Is line 3 at least 6 times line 1? (Yes/No) _____
12. Is line 7 at least 6 times line 1? (Yes/No) _____
*13. Are at least 90% of firm's assets located in the U.S.? If not, complete line 14 (Yes/No) _____
14. Is line 9 at least 6 times line 1? (Yes/No) _____
15. Is line 2 divided by line 4 less than 2.0? (Yes/No) _____
16. Is line 8 divided by line 2 greater than 0.1? (Yes/No) _____
17. Is line 5 divided by line 6 greater than 1.5? (Yes/No) _____

Alternative II

1. Sum of current closure and post-closure cost estimates (total of all cost estimates shown in the five paragraphs above) $_____
2. Current bond rating of most recent issuance of this firm and name of rating service $_____
3. Date of issuance of bond _____
4. Date of maturity of bond _____
*5. Tangible net worth (if any portion of the closure and post-closure cost estimates is included in "total liabilities" on your firm's financial statements, you may add that portion

	to this line)	$_____
*6.	Total assets in U.S. (required only if less than 90% of firm's assets are located in the U.S.)	$_____
7.	Is line 5 at least $10 million? (Yes/No)	$_____
8.	Is line 5 at least 6 times line 1? (Yes/No)	_____
*9.	Are at least 90% of firm's assets located in the U.S.? If not, complete line 10 (Yes/No) _____	
10.	Is line 6 at least 6 times line 1? (Yes/No)	_____

I hereby certify that the wording of this letter is identical to the wording specified in Tennessee Rule 1200-01-11-.06(8)(p)6 as such regulations were constituted on the date shown immediately below.

[Signature]_____

[Name]_____

[Title]_____

[Date]_____

* * * * * * * * * * * *

7. LETTER FROM CHIEF FINANCIAL OFFICER

A letter from the chief financial officer, as specified in Rule 1200-01-11-.05(8)(n)6 or Rule 1200-01-11-.06(8)(n)6, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the parentheses deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

(Address to Division Director)

I am the chief financial officer of [firm's name and address]. This letter is in support of the use of the financial test to demonstrate financial responsibility for liability coverage [insert "and closure and/or post-closure care" if applicable] as specified in Rules 1200-01-11-.05(8) and 1200-01-11-.06(8).

(Fill out the following paragraphs regarding facilities and liability coverage. If there are no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its Installation Identification Number, name, and address.)

The firm identified above is the owner or operator of the following facilities for which liability coverage for [insert "sudden" or "nonsudden" or "both sudden and nonsudden"] accidental occurrences is being demonstrated through the financial test specified in Rules 1200-01-11-.05(8) and 1200-01-11-.06(8):_____.

The firm identified above guarantees, through the guarantee specified in Rules 1200-01-11-.05(8) and 1200-01-11-.06(8), liability coverage for [insert "sudden" or "nonsudden" or

"both sudden and nonsudden"] accidental occurrences at the following facilities owned or operated by the following: _____. The firm identified above is (insert one or more: (1) The direct or higher-tier parent corporation of the owner or operator; (2) owned by the same parent corporation as the parent corporation of the owner or operator, and receiving the following value in consideration of this guarantee _____; or (3) engaged in the following substantial business relationship with the owner or operator _____, and receiving the following value in consideration of this guarantee _____.) (Attach a written description of the business relationship or a copy of the contract establishing such relationship to this letter.)

(If you are using the financial test to demonstrate coverage of both liability and closure and post-closure care, fill in the following five paragraphs regarding facilities and associated closure and post-closure cost estimates. If there are no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its Installation Identification Number, name, address, and current closure and/or post-closure cost estimates. Identify each cost estimate as to whether it is for closure or post-closure care.)

(i) The firm identified above owns or operates the following facilities for which financial assurance for closure or post-closure care or liability coverage is demonstrated through the financial test specified in Rules 1200-01-11-.05(8) and 1200-01-11-.06(8). The current closure and/or post-closure cost estimate covered by the test are shown for each facility: _____

(ii) The firm identified above guarantees, through the guarantee specified in Rules 1200-01-11-.05(8) and 1200-01-11-.06(8), the closure and post-closure care or liability coverage of the following facilities owned or operated by the guaranteed party. The current cost estimates for the closure or post-closure care so guaranteed are shown for each facility:_____

(iii) In States other than Tennessee, this firm is demonstrating financial assurance for the closure or post-closure care of the following facilities through the use of a test equivalent or substantially equivalent to the financial test specified in Rules 1200-01-11-.05(8) and 1200-01-11-.06(8). The current closure or post-closure cost estimates covered by such a test are shown for each facility:_____

(iv) The firm identified above owns or operates the following hazardous waste management facilities for which financial assurance for closure or, if a disposal facility, post-closure care, is not demonstrated either to the Department, another State, or the U.S. Environmental Protection Agency through the financial test or any other financial assurance mechanisms specified in Rules 1200-01-11-.05(8) and 1200-01-11-.06(8) or equivalent or substantially equivalent State mechanisms. The current closure or post-closure cost estimates not covered by such financial assurance are shown for each facility:_____.

(v) This firm is the owner or operator or guarantor of the following UIC facilities for which financial assurance for plugging and abandonment is required under 40 CFR Part 144 and is assured through a financial test. The current closure cost estimates as required by 40 CFR 144.62 are shown for each facility:_____

This firm [insert "is required" or "is not required"]to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on [month, day] The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended [date].

(Fill in part A if you are using the financial test to demonstrate coverage only for the liability requirements.)

Part A. Liability Coverage for Accidental Occurrences

(Fill in Alternative I if the criteria of Rule 1200-01-11-.05(8)(n)6(i)(I) or Rule 1200-01-11-.06(8)(n)6(i)(I) are used. Fill in Alternative II if the criteria of Rule 1200-01-11-.05(8)(n)6(i)(II) or Rule 1200-01-11-.06(8)(n)6(i)(II) are used.)

ALTERNATIVE I

1.	Amount of annual aggregate liability coverage to be demonstrated.	$_____
*2.	Current assets	$_____
*3.	Current liabilities	$_____
4.	Net working capital (line 2 minus line 3).	$_____
*5.	Tangible net worth	$_____
*6.	If less than 90% or assets are located in the U.S., given total U.S. assets.	$_____
		Yes or No
7.	Is line 5 at least $10 million?	_____
8.	Is line 4 at least 6 times line 1?	_____
9.	Is line 5 at least 6 times line 1?	_____
*10.	Are at least 90% of assets located in the U.S.? If not, complete line 11.	_____
11.	Is line 6 at least 6 times line 1?	_____

ALTERNATIVE II

1.	Amount of annual aggregate liability coverage to be demonstrated.	$_____
2.	Current bond rating of most recent issuance and name of rating service.	_____
3.	Date of issuance of bond.	_____
4.	Date of maturity of bond.	_____
*5.	Tangible net worth	$_____
*6.	Total assets in U.S. (required only if less than 90% of assets are located in the U.S.).	$_____
		Yes or No
7.	Is line 5 at least $10 million?	_____
8.	Is line 5 at least 6 times line 1?	_____
9.	Are at least 90% of assets located in the U.S.? If not, complete	_____

line 10.

10. Is line 6 at least 6 times line 1? _____

(Fill in part B if you are using the financial test to demonstrate assurance of both liability coverage and closure or post-closure care.)

Part B. Closure or Post-Closure Care and Liability Coverage

(Fill in Alternative I if the criteria of Rule 1200-01-11-.06(8)(g)8(i)(I) and Rule 1200-01-11-.06(8)(n)6(i)(I) are used or if the criteria of Rule 1200-01-11-.05(8)(g)7(i)(I) and Rule 1200-01-11-.05(8)(n)6(i)(I) are used. Fill in Alternative II if the criteria of Rule 1200-01-11-.06(8)(g)8(i)(II) and Rule 1200-01-11-.06(8)(n)6(i)(II) are used or if the criteria of Rule 1200-01-11-.05(8)(g)7(i)(II) and Rule 1200-01-11-.05(8)(n)6(i)(II) are used.)

ALTERNATIVE I

1.	Sum of current closure and post-closure cost estimates (total of all cost estimates listed above).	$_____
2.	Amount of annual aggregate liability coverage to be demonstrated.	$_____
3.	Sum of lines 1 and 2	$_____
*4.	Total liabilities (if any portion of your closure or post-closure cost estimates is included in your total liabilities, you may deduct that portion from this line and add that amount to lines 5 and 6).	$_____
*5.	Tangible net worth	$_____
*6.	Net worth	$_____
*7.	Current assets	$_____
*8.	Current liabilities	$_____
9.	Net working capital (line 7 minus line 8).	$_____
*10.	The sum of net income plus depreciation, depletion, and amortization.	$_____
*11.	Total assets in U.S. (required only if less than 90% of assets are located in the U.S.).	$_____
		Yes or No
12.	Is line 5 at least $10 million?	_____
13.	Is line 5 at least 6 times line 3?	_____
14.	Is line 9 at least 6 times line 3?	_____
*15.	Are at least 90% of assets located in the U.S.? If not, complete line 16.	_____
16.	Is line 11 at least 6 times line 3?	_____
17.	Is line 4 divided by line 6 less than 2.0?	_____
18.	Is line 10 divided by line 4 greater than 0.1?	_____
19.	Is line 7 divided by line 8 greater than 1.5?	_____

ALTERNATIVE II

1.	Sum of current closure and post-closure cost estimates (total of all cost estimates listed above).	$_____
2.	Amount of annual aggregate liability coverage to be demonstrated.	$_____
3.	Sum of lines 1 and 2	$_____
4.	Current bond rating of most recent issuance and name of rating service.	$_____
5.	Date of issuance of bond.	_____
6.	Date of maturity of bond.	_____
*7.	Tangible net worth (if any portion of the closure or post-closure cost estimates is included in "total liabilities" on your financial statements you may add that portion to this line.)	$_____
*8.	Total assets in U.S. (required only if less than 90% of assets are located in the U.S.).	$_____
		Yes or No
9.	Is line 7 at least $10 million?	_____
10.	Is line 7 at least 6 times line 3?	_____
*11.	Are at least 90% of assets located in the U.S.? If not, complete line 12.	_____
12.	Is line 8 at least 6 times line 3?	_____

I hereby certify that the wording of this letter is identical to the wording specified in Tennessee Rule 1200-01-11-.06(8)(p)7 as such regulations were constituted on the date shown immediately below.

(Signature)_____

(Name)_____

(Title)_____

(Date)_____

* * * * * * * * * * * *

8. CORPORATE GUARANTEE FOR CLOSURE OR POST-CLOSURE CARE

(i) A corporate guarantee, as specified in Rule 1200-01-11-.05(8)(g)7 or Rule 1200-01-11-06(8)(g)8, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CORPORATE GUARANTEE FOR CLOSURE OR POST-CLOSURE CARE

Guarantee made this [date] by [name of guaranteeing entity], a business corporation organized under the laws of the State of [insert name of State], herein referred to as

guarantor. This guarantee is made [to the Tennessee Department of Environment and Conservation] on behalf of the [owner or operator] of [business address], which is [one of the following: "our subsidiary", "a subsidiary of [name and address of common parent corporation], of which guarantor is a "subsidiary"; or "an entity with which guarantor has a substantial business relationship, as defined in either Rule 1200-01-11-.05(8)(b) or Rule 1200-01-11-.06(8)(b)".

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in Rule 1200-01-11-.05(8)(n)7 and Rule 1200-01-11-.06(8)(n)7.

2. [Owner or operator] owns or operates the following hazardous waste management facility(ies) covered by this guarantee: (List for each facility: Installation Identification Number, name, and address. Indicate for each whether guarantee is for closure, post-closure care, or both.)

3. "Closure plans" and "post-closure plans" as used below refer to the plans maintained as required by Tennessee Rules 1200-01-11-.05(7) and 1200-01-11-.06(7) for the closure and post-closure care of facilities as identified above.

4. For value received from [owner or operator], guarantor guarantees to the Department that in the event that [owner or operator] fails to perform [insert "closure," "post-closure care" or "closure and post-closure care"] of the above facility(ies) in accordance with the closure or post-closure plans and other permit or interim status requirements whenever required to do so, the guarantor shall do so or forfeit to the State of Tennessee, as specified in Tennessee Rules 1200-01-11-.05(8) or 1200-01-11-.06(8), as applicable, monies in an amount equal to the current closure or post-closure cost estimates as specified in Tennessee Rules 1200-01-11-.05(8) and 1200-01-11-.06(8).

5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within 90 days, by certified mail, notice to the Director of the Department's Division of Solid Waste Management (Division Director) and to [owner or operator] that he intends to provide alternate financial assurance as specified in Tennessee Rules 1200-01-11-.05(8) or 1200-01-11-.06(8), as applicable, in the name of (owner or operator). Within 120 days after the end of such fiscal year, the guarantor shall establish such financial assurance unless [owner or operator] has done so.

6. The guarantor agrees to notify the Division Director, by certified mail, of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within 10 days after commencement of this proceeding.

7. Guarantor agrees that within 30 days after being notified by the Division Director of a determination that guarantor no longer meets the financial test criteria or that he is disallowed from continuing as a guarantor of closure or post-closure, he shall establish alternate financial assurance as specified in Tennessee Rules 1200-01-11-.05(8) or 1200-01-11-.06(8), as applicable, in the name of [owner or operator] unless [owner or operator] has done so.

8. Guarantor agrees to remain bound under this guarantee notwithstanding any or all of the following: amendment or modification of the closure or post-closure

plan, amendment or modification of the permit, the extension or reduction of the time of performance of closure or post-closure, or any other modification or alteration of an obligation of the owner or operator pursuant to Tennessee Rules 1200-01-11-.05 or 1200-01-11-.06.

9. Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable financial assurance requirements of Tennessee Rules 1200-01-11-.05(8) and 1200-01-11-.06(8) for the above-listed facilities, except that guarantor may cancel this guarantee by sending notice by certified mail to the Division Director and to [owner or operator], such cancellation to become effective no earlier than 120 days after receipt of such notice by both the Department and [owner or operator], as evidenced by the return receipts.

10. (Insert the following language if the guarantor is (a) a direct or higher-tier corporate parent, or (b) a firm whose parent corporation is also the parent corporation of the owner or operator.)

    Guarantor may terminate this guarantee by sending notice by certified mail to the Division Director and to [owner or operator], provided that this guarantee may not be terminated unless and until [owner or operator] obtains, and the Commissioner approve(s), alternate closure and/or post-closure care coverage complying with Rule 1200-01-11-.05(8)(n) and/or rule 1200-01-11-.06(8)(n).

    (Insert the following language if the guarantor is a firm qualifying as a guarantor due to its "substantial business relationship" with its owner or operator.)

    Guarantor may terminate this guarantee 120 days following the receipt of notification, through certified mail, by the Division Director and by [the owner or operator].

11. Guarantor agrees that if [owner or operator] fails to provide alternate financial assurance as specified in Tennessee Rules 1200-01-11-.05(8) or 1200-01-11-.06(8), as applicable, and obtain written approval of such assurance from the Division Director within 90 days after a notice of cancellation by the guarantor is received by the Division Director from guarantor, guarantor shall provide such alternate financial assurance in the name of [owner or operator].

12. Guarantor expressly waives notice of acceptance of this guarantee by the Department or by [owner or operator]. Guarantor also expressly waives notice of amendments or modifications of the closure and/or post-closure plan and of amendments or modifications of the facility permit(s).

I hereby certify that the wording of this guarantee is identical to the wording specified in Tennessee Rule 1200-01-11-.06(8)(p)8(i) as such regulations were constituted on the date first above written.

Effective Date:_____

(Name of guarantor)_____

(Authorized signature for guarantor)_____

(Name of person signing)_____

(Title of person signing)_____

Subscribed and sworn to before me this _____day of _____, ___

_____
Notary Public

My commission expires on the _____day of _____, _____

(ii) A guarantee, as specified in Rule 1200-01-11-.05(8)(n)7 or Rule 1200-01-11-.06(8)(n)7 of this paragraph, must be worded as follows, except that instructions in parentheses are to be replaced with the relevant information and the brackets deleted:

GUARANTEE FOR LIABILITY COVERAGE

Guarantee made this [date] by [name of guaranteeing entity], a business corporation organized under the laws of [if incorporated within the United States], insert "the State of _____" and insert name of State; if incorporated outside the United States, insert the name of the country in which incorporated, the principal place of business within the United States, and the name and address of the registered agent in the State of the principal place of business], herein referred to as guarantor. This guarantee is made on behalf of [owner or operator] of [business address], which is one of the following: "our subsidiary;" "a subsidiary of [name and address of common parent corporation], of which guarantor is a subsidiary;" or "an entity with which guarantor has a substantial business relationship, as defined in [either Rule 1200-01-11-.05(8)(b) or Rule 1200-01-11-.06(8)(b)]" to any and all third parties who have sustained or may sustain bodily injury or property damage caused by [sudden and/or nonsudden] accidental occurrences arising from operation of the facility(ies) covered by this guarantee.

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in Rule 1200-01-11-.05(8)(n)7 or Rule 1200-01-11-.06(8)(n)7.

2. [Owner or operator] owns or operates the following hazardous waste management facility(ies) covered by this guarantee: (List for each facility: Installation Identification Number, name, and address; and if guarantor is incorporated outside the United States, list the name and address of the guarantor's registered agent in each State.) This corporate guarantee satisfies third-party liability requirements for [insert "sudden" or "nonsudden" or "both sudden and nonsudden"] accidental occurrences in above-named owner or operator facilities for coverage in the amount of [insert dollar amount] for each occurrence and [insert dollar amount] annual aggregate.

3. For value received from [owner or operator], guarantor guarantees to any and all third parties who have sustained or may sustain bodily injury or property damage caused by [sudden and/or nonsudden] accidental occurrences arising from operations of the facility(ies) covered by this guarantee that in the event that [owner or operator] fails to satisfy a judgement or award based on a

determination of liability for bodily injury or property damage to third parties caused by [sudden and/or nonsudden] accidental occurrences, arising from the operation of the above-named facilities, or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor will satisfy such judgment(s), award(s), or settlement agreement(s) up to the limits of coverage identified above.

4. Such obligation does not apply to any of the following:

(i) Bodily injury or property damage for which [insert “owner” or “operator”] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert “owner” or “operator”] would be obligated to pay in the absence of the contract or agreement.

(ii) Any obligation of [insert “owner” or “operator”] under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(iii) Bodily injury to:

(I) An employee of [insert “owner” or “operator”] arising from, and in the course of, employment by [insert “owner” or “operator”]; or

(II) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert “owner” or “operator”]. This exclusion applies:

I. Whether [insert “owner” or “operator”] may be liable as an employer or in any other capacity; and

II. To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in items (I) and (II).

(iv) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle or watercraft.

(v) Property damage to:

(I) Any property owned, rented, or occupied by [insert “owner” or “operator”];

(II) Premises that are sold, given away or abandoned by [insert “owner” or “operator”] if the property damage arises out of any part of those premises;

(III) Property loaned to [insert “owner” or “operator”];

(IV) Personal property in the care, custody or control of [insert “owner” or “operator”];

(V) That particular part of real property on which [insert “owner” or “operator”] or any contractors or subcontractors working directly

or indirectly on behalf of [insert “owner” or “operator”] are performing operations, if the property damage arises out of these operations.

5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within 90 days, by certified mail, notice to the Division Director and to [owner or operator] that he intends to provide alternate liability coverage as specified in Rules 1200-01-11-.05(8)(n) and 1200-01-11-.06(8)(n), as applicable, in the name of [owner or operator]. Within 120 days after the end of such fiscal year, the guarantor shall establish such liability coverage unless [owner or operator] has done so.

6. The guarantor agrees to notify the Division Director by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy) U.S. Code, naming guarantor as debtor, within 10 days after commencement of the proceeding.

7. Guarantor agrees that within 30 days after being notified by the Division Director of a determination that guarantor no longer meets the financial test criteria or that he is disallowed from continuing as a guarantor, he shall establish alternate liability coverage as specified in Rules 1200-01-11-.05(8)(n) and 1200-01-11-.06(8)(n) in the name of [owner or operator], unless [owner or operator] has done so.

8. Guarantor reserves the right to modify this agreement to take into account amendment or modification of the liability requirements set by Rules 1200-01-11-.05(8)(n) and 1200-01-11-.06(8)(n), provided that such modification shall become effective only if the Division Director does not disapprove the modification within 30 days of receipt of notification of the modification.

9. Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable requirements of Rules 1200-01-11-.05(8)(n) and 1200-01-11-.06(8)(n) for the above-listed facility(ies), except as provided in paragraph 10 of this agreement.

10. (Insert the following language if the guarantor is (a) a direct or higher-tier corporate parent, or (b) a firm whose parent corporation is also the parent corporation of the owner or operator.)

    Guarantor may terminate this guarantee by sending notice by certified mail to the Division Director and to [owner or operator], provided that this guarantee may not be terminated unless and until [the owner or operator] obtains, and the Division Director approve(s), alternate liability coverage complying with Rules 1200-01-11-.05(8)(n) and 1200-01-11-.06(8)(n).

    (Insert the following language if the guarantor is a firm qualifying as a guarantor due to its "substantial business relationship" with the owner or operator.)

    Guarantor may terminate this guarantee 120 days following receipt of notification, through certified mail, by the Division Director and by [the owner or operator].

11. Guarantor hereby expressly waives notice of acceptance of this guarantee by any party.

12. Guarantor agrees that this guarantee is in addition to and does not affect any other responsibility or liability of the guarantor with respect to the covered facilities.

13. The Guarantor shall satisfy a third-party liability claim only on receipt of one of the following documents:

(i) Certification from the Principal and the third-party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in parentheses are to be replaced with the relevant information and the parentheses deleted:

CERTIFICATION OF VALID CLAIM

The undersigned, as parties [insert Principal] and [insert name and address of third-party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operating (Principal's) hazardous waste treatment, storage, or disposal facility should be paid in the amount of $(_____).

(Signatures)_____
Principal

Subscribed and sworn to before me this _____day of _____, ___

_____
Notary Public

My commission expires on the _____day of _____, _____

(Signatures)_____
Claimant(s)

Subscribed and sworn to before me this _____day of _____, ___

_____
Notary Public

My commission expires on the _____day of _____, _____

(ii) A valid final court order establishing a judgment against the Principal for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Principal's facility or group of facilities.

14. In the event of combination of this guarantee with another mechanism to meet liability requirements, this guarantee will be considered [insert "primary" or "excess"] coverage.

I hereby certify that the wording of the guarantee is identical to the wording specified in Tennessee Rule 1200-01-11-.06(8)(p)8(ii) as such regulations were constituted on the date shown immediately below.

Effective date:_____

(Name of guarantor)_____

(Authorized signature for guarantor)_____

(Name of person signing)_____

(Title of person signing)_____

Subscribed and sworn to before me this _____day of _____, _____

_____
Notary Public

My commission expires on the _____day of _____, _____

* * * * * * * * * * * *

9. HAZARDOUS WASTE FACILITY LIABILITY ENDORSEMENT

A hazardous waste facility liability endorsement, as required in Rule 1200-01-11-.05(8)(n) and Rule 1200-01-11-.06(8)(n) must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

HAZARDOUS WASTE FACILITY LIABILITY ENDORSEMENT

(i) This endorsement certifies that the policy to which the endorsement is attached provides liability insurance covering bodily injury and property damage in connection with the insured's obligation to demonstrate financial responsibility under Tennessee Department of Environment and Conservation Rules 1200-01-11-.05(8)(n) or 1200-01-11-.06(8)(n). The coverage applies at [list Installation Identification Number, name and address for each facility] for [insert "sudden accidental occurrences", "nonsudden accidental occurrences", or "sudden and nonsudden accidental occurrences". If coverage is for multiple facilities and the coverage is different for different facilities, indicate which facilities are insured for sudden accidental occurrences, which are insured for nonsudden accidental occurrences, and which are insured for both.] The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's liability], exclusive of legal defense costs. [If the endorsement is for an excess insurance policy, this last sentence should be replaced by a sentence which reads "The limits of liability are $_____ each occurrence and $_____ annual aggregate for bodily injury and property damage combined in excess of the underlying limits of

$_____ each occurrence and $_____ annual aggregate", with the appropriate amounts indicated.]

(ii) The insurance afforded with respect to such occurrences is subject to all of the terms and conditions of the policy, provided, however, that any provision of the policy inconsistent with subitems I through V of this item are hereby amended to conform with subitems I through V:

I. Bankruptcy or insolvency of the insured shall not relieve the Insurer of its obligations under the policy to which this endorsement is attached.

II. The Insurer is liable for the payment of amounts within any deductible, applicable to the policy, with a right of reimbursement by the insured for any such payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in Rules 1200-01-11-.05(8)(n)6 or 1200-01-11-.06(8)(n)6.

III. Whenever requested by the Commissioner of the Tennessee Department of Environment and Conservation or his designee, the Insurer agrees to furnish to the Commissioner or designee a signed duplicate original of the policy and all endorsements.

IV. Cancellation of this endorsement, whether by the Insurer, the insured, a parent corporation providing insurance coverage for its subsidiary, or by a firm having an insurable interest in and obtaining liability insurance on behalf of the owner or operator of the hazardous waste management facility, will be effective only upon written notice and only after the expiration of 60 days after a copy of such written notice is received by the Division Director.

V. Any other termination of this endorsement will be effective only upon written notice and only after the expiration of thirty (30) days after a copy of such written notice is received by the Division Director.

Attached to and forming part of policy no. _____ issued by (name of Insurer), herein called the Insurer, (addressof Insurer) to (name of Insured) of (address) this _____day of _, ____. The effective date of said policy is _____ day of _____, ____.

I hereby certify that the wording of this endorsement is identical to the wording specified in Tennessee Department of Environment and Conservation Rule 1200-01-11-.06(8)(p)9 as such regulation was constituted on the date first above written, and that the Insurer is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in Tennessee.

(Signature of Authorized Representative of Insurer)_____

(Type name)_____

(Title), Authorized Representative of (Name of Insurer)_____

(Address of Representative)_____

* * * * * * * * * * * *

10. HAZARDOUS WASTE FACILITY CERTIFICATE OF LIABILITY INSURANCE

A certificate of liability insurance as required in Rule 1200-01-11-.05(8)(n) or subparagraph (n) of this paragraph, must be worded as follows, except that the instructions in parentheses are to be replaced with the relevant information and the parentheses deleted:

HAZARDOUS WASTE FACILITY CERTIFICATE OF LIABILITY INSURANCE

(i) (Name of Insurer), the "Insurer", of (Address of Insurer) hereby certifies that it has issued liability insurance covering bodily injury and property damage to (Name of Insured), the "insured", of (Address of Insured) in connection with the insured's obligation to demonstrate financial responsibility under Tennessee Department of Environment and Conservation Rules 1200-01-11-.05(8)(n) or 1200-01-11-.06(8)(n). The coverage applies at (list installation identification number, name and address for each facility) for (insert "sudden accidental occurrences", "nonsudden accidental occurrences", or "sudden and nonsudden accidental occurrences"; if coverage is for multiple facilities and the coverage is different for different facilities, indicate which facilities are insured for sudden accidental occurrences, which are insured for nonsudden accidental occurrences, and which are insured for both.) The limits of liability are (insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's liability), exclusive of legal defense costs. (If the certificate is for an excess insurance policy, this last sentence should be replaced by a sentence which reads "The limits of liability are $ _____ each occurrence and $ ___ annual aggregate for bodily injury and property damage combined in excess of the underlying limits of $ _____ each occurrence and $ _____ annual aggregate", with the appropriate amounts indicated.) The coverage is provided under policy number ___, issued on (date). The effective date of said policy is (date).

(ii) The Insurer further certifies the following with respect to the insurance described in item (I):

(I) Bankruptcy or insolvency of the insured shall not relieve the Insurer of its obligations under the policy.

(II) The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the insured for any such payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in Rule 1200-01-11-.05(8)(n)6 or Rule 1200-01-11-.06(8)(n)6.

(III) Whenever requested by the Commissioner of the Tennessee Department of Environment and Conservation or his designee, the Insurer agrees to furnish to the Commissioner or his designee a signed duplicate original of the policy and all endorsements.

(IV) Cancellation of the insurance, whether by the insurer, the insured, a parent corporation providing insurance coverage for its subsidiary, or by a firm having an insurable interest in and obtaining liability insurance on behalf of the owner or operator of the hazardous waste management facility, will be effective only upon written notice and only after the expiration of 60 days after a copy of such written notice is received by the Division Director.

(V) Any other termination of the insurance will be effective only upon written notice and only after the expiration of thirty (30) days after a copy of such written notice is received by the Division Director.

I hereby certify that the wording of this instrument is identical to the wording specified in Tennessee Department of Environment and Conservation Rule 1200-01-11-.06(8)(p)10 as such regulation was constituted on the date first above written, and that the Insurer is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in the state of Tennessee.

(Signature of Authorized Representative of Insurer)_____

(Type Name)_____

(Title) Authorized Representative of (Name of Insurer)_____

(Address of Representative)_____

* * * * * * * * * * * *

11. IRREVOCABLE STANDBY LETTER OF CREDIT

A letter of credit, as specified in Rule 1200-01-11-.05(8)(n)8 or part (n)8 of this paragraph, must be worded as follows, except that instructions in parentheses are to be replaced with the relevant information and the parentheses deleted:

IRREVOCABLE STANDBY LETTER OF CREDIT

Name and Address of Issuing Institution_____
_____
_____

(Address to Division Director)

Dear Sir or Madam: We hereby establish our Irrevocable Standby Letter of Credit No. ____ in the favor of any and all third-party liability claimants, at the request and for the account of (owner's or operator's name and address) for third-party liability awards or settlements up to (in words) U.S. dollars $____per occurrence and the annual aggregate amount of (in words) U.S. dollars $_____, for sudden accidental occurrences and/or for third-party liability awards or settlements up to the amount of (in words) U.S. dollars $ _____ per occurrence, and the annual aggregate amount of (in words) U.S. dollars $ _____, for nonsudden accidental occurrences available upon presentation of a sight draft, bearing reference to this letter of credit No. ___, and

(1) a signed certificate reading as follows:

CERTIFICATION OF VALID CLAIM

The undersigned, as parties (insert principal) and (insert name and address of third-party claimants), hereby certify that the claim of bodily injury (and/or) property damage caused by a (sudden or nonsudden) accidental occurrence arising from operations of (principal's) hazardous waste treatment, storage, or disposal facility should be paid in the amount of $_____. We hereby certify that the claim does not apply to any of the following:

(i) Bodily injury or property damage for which (insert principal) is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that (insert principal) would be obligated to pay in the absence of the contract or agreement.

(ii) Any obligation of (insert principal) under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(iii) Bodily injury to:

(I) An employee of (insert principal) arising from, and in the course of, employment by (insert principal); or

(II) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by (insert principal). This exclusion applies:

I. Whether (insert principal) may be liable as an employer or in any other capacity; and

II. To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in subitems I and II of this item.

(iv) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle or watercraft.

(v) Property damage to:

(I) Any property owned, rented, or occupied by (insert principal);

(II) Premises that are sold, given away or abandoned by (insert principal) if the property damage arises out of any part of those premises;

(III) Property loaned to (insert principal);

(IV) Personal property in the care, custody or control of (insert principal);

(V) That particular part of real property on which (insert principal) or any contractors or subcontractors working directly or indirectly on behalf of (insert principal) are performing operations, if the property damage arises out of these operations.

(Signatures)

Grantor_____

(Signatures)

Claimant(s)_____

or

(2) a valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from operation of the Grantor's facility or group of facilities.

This letter of credit is effective as of (date) and shall expire on (date at least one year later), but such expiration date shall be automatically extended for a period of (at least one year) on (date) and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify you, the Division Director, and (owner's or operator's name) by certified mail that we have decided not to extend this letter of credit beyond the current expiration date.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us.

In the event that this letter of credit is used in combination with another mechanism for liability coverage, this letter of credit shall be considered (insert "primary" or "excess") coverage.

We certify that the wording of this letter of credit is identical to the wording specified in Tennessee Rule 1200-01-11-.06(8)(p)11 as such regulations were constituted on the date shown immediately below.

(Signatures(s))_____

(Name(s))_____

(Title(s))_____

(Date)_____

This credit is subject to (insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce" or "the Uniform Commercial Code").

* * * * * * * * * * * *

12. PAYMENT BOND

A surety bond, as specified in Rule 1200-01-11-.05(8)(n)9 or part (n)9 of this paragraph, must be worded as follows except that instructions in parentheses are to be replaced with the relevant information and the parentheses deleted:

PAYMENT BOND

Surety Bond No. (Insert Number)

Parties (insert name and address of owner or operator), Principal, incorporated in (Insert State of incorporation) of (Insert city and State of principal place of business) and (Insert name and address of surety company(ies)), Surety Company(ies), of (Insert surety(ies) place of business).

Installation Identification Number, name, and address for each facility guaranteed by this bond:

_____

	Sudden Accidental Occurences	Nonsudden Accidental Occurences
Penal Sum Per Occurence	(insert amount)	(insert amount)
Annual Aggregate	(insert amount)	(insert amount)

Purpose:

This is an agreement between the Surety(ies) and the Principal under which the Surety(ies), its (their) successors and assignees, agree to be responsible for the payment of claims against the Principal for bodily injury and/or property damage to third parties caused by ("sudden" and/or "nonsudden") accidental occurrences arising from operations of the facility or group of facilities in the sums prescribed herein; subject to the governing provisions and the following conditions:

Governing Provisions:

(i) Sections 68-212-107 and 68-212-108 of the Hazardous Waste Management Act of l977, as amended (Tennessee Code Annotated, Title 68, Chapter 212, Part 1).

(ii) Rules and regulations of the Tennessee Division of Solid Waste Management, particularly ("Rule 1200-01-11-.05(8)(n)" or "Rule 1200-01-11-.06(8)(n)") (if applicable).

(iii) Applicable rules and regulations of the Tennessee Department of Commerce and Insurance and any other applicable laws or regulations.

Conditions:

(i) The Principal is subject to the applicable governing provisions that require the Principal to have and maintain liability coverage for bodily injury and property damage to third parties caused by ("sudden" and/or "nonsudden") accidental occurrences arising from operations of the facility or group of facilities. Such obligation does not apply to any of the following:

(I) Bodily injury or property damage for which (insert principal) is obligated to pay damages by reason of the assumption of liability in a contract or

agreement. This exclusion does not apply to liability for damages that (insert principal) would be obligated to pay in the absence of the contract or agreement.

(II) Any obligation of (insert principal) under a workers' compensation, disability benefits, or unemployment compensation law or similar law.

(III) Bodily injury to:

I. An employee of (insert principal) arising from, and in the course of, employment by (insert principal); or

II. The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by (insert principal). This exclusion applies:

A. Whether (insert principal) may be liable as an employer or in any other capacity; and

B. To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in sections A and B.

(IV) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle or watercraft.

(V) Property damage to:

I. Any property owned, rented, or occupied by (insert principal);

II. Premises that are sold, given away or abandoned by (insert principal) if the property damage arises out of any part of those premises;

III. Property loaned to (insert principal);

IV. Personal property in the care, custody or control of (insert principal);

V. That particular part of real property on which (insert principal) or any contractors or subcontractors working directly or indirectly on behalf of (insert principal) are performing operations, if the property damage arises out of these operations.

(ii) This bond assures that the Principal will satisfy valid third party liability claims, as described in condition (I).

(iii) If the Principal fails to satisfy a valid third party liability claim, as described above, the Surety(ies) becomes liable on this bond obligation.

(iv) The Surety(ies) shall satisfy a third party liability claim only upon the receipt of one of the following documents:

(I) Certification from the Principal and the third party claimant(s) that the liability claim should be paid. The certification must be worded as

follows, except that instructions in parentheses are to be replaced with the relevant information and the parentheses deleted:

Certification of Valid Claim

The undersigned, as parties (insert name of Principal) and (insert name and address of third party claimant(s)), hereby certify that the claim of bodily injury and/or property damage caused by a (sudden or nonsudden) accidental occurrence arising from operating (Principal's) hazardous waste treatment, storage, or disposal facility should be paid in the amount of $(_____).

(Signature)_____
Principal)

Subscribed and sworn to before me this _____ day of _____, _____

_____
Notary Public

My commission expires on the _____ day of _____, _____

(Signature(s))_____
Claimant(s)

Subscribed and sworn to before me this _____ day of _____, _____

_____
Notary Public

My commission expires on the _____ day of _____, _____

or

(II) A valid final court order establishing a judgment against the Principal for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Principal's facility or group of facilities.

(v) In the event of combination of this bond with another mechanism for liability coverage, this bond will be considered (insert "primary" or "excess") coverage.

(vi) The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond. In no event shall the obligation of the Surety(ies) hereunder exceed the amount of said annual aggregate penal sum, provided that the Surety(ies) furnish(es) notice to the

Division Director forthwith of all claims filed and payments made by the Surety(ies) under this bond.

(vii) The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal and the Division Director, provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by the Principal and the Division Director, as evidenced by the return receipt.

(viii) The Principal may terminate this bond by sending written notice to the Surety(ies) and to the Division Director.

(ix) The Surety(ies) hereby waive(s) notification of amendments to applicable laws, statutes, rules and regulations and agree(s) that no such amendment shall in any way alleviate its (their) obligation on this bond.

(x) This bond is effective from (insert date) (12:01 a.m., standard time, at the address of the Principal as stated herein) and shall continue in force until terminated as described above.

In Witness Whereof, the Principal and Surety(ies) have executed this Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in Tennessee Rule 1200-01-11-.06(8)(p)12, as such regulations were constituted on the date this bond was executed.

PRINCIPAL

(Signature(s))_____

(Name(s))_____

(Title(s))_____

(Corporate Seal)

CORPORATE SURETY(IES)

(Name and address)
State of incorporation: _____

Liability Limit: $_____

(Signature(s))_____

(Name(s) and title(s))_____

(Corporate seal)

(For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.)

Bond premium: $_____

* * * * * * * * * * * *

13. TRUST AGREEMENT

(i) A trust agreement, as specified in Rule 1200-01-11-.05(8)(n)10 or part (n)10 of this paragraph, must be worded as follows, except that instructions in parentheses are to be replaced with the relevant information and the parentheses deleted:

TRUST AGREEMENT

Trust Agreement, the "Agreement," entered into as of (date) by and between (name of the owner or operator) a (name of State) (insert "corporation," "partnership," "association," or "proprietorship"), the "Grantor," and (name of corporate trustee), (insert "incorporated in the State of _____" or "a national bank"), the "Trustee."

Whereas the Tennessee Solid Waste Disposal Control Board has established certain regulations applicable to the Grantor, requiring that an owner or operator of a hazardous waste management facility or group of facilities must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental and/or nonsudden accidental occurrences arising from operations of the facility or group of facilities.

Whereas, the Grantor has elected to establish a trust to assure all or part of such financial responsibility for the facilities identified herein.

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee.

Now, therefore, the Grantor and the Trustee agree as follows:

SECTION 1
DEFINITIONS

As used in this Agreement:

(I) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(II) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

SECTION 2
IDENTIFICATION OF FACILITIES

This agreement pertains to the facilities identified on attached schedule A (on schedule A, for each facility list the EPA Identification Number, name, and address of the facility(ies) and the amount of liability coverage, or portions

thereof, if more than one instrument affords combined coverage as demonstrated by this Agreement).

SECTION 3
ESTABLISHMENT OF FUND

The Grantor and the Trustee hereby establish a trust fund, hereinafter the "Fund," for the benefit of any and all third parties injured or damaged by (sudden and/or nonsudden) accidental occurrences arising from operation of the facility(ies) covered by this guarantee, in the amounts of ___(up to $1 million) per occurrence and _____(up to $2 million) annual aggregate for sudden accidental occurrences and _____(up to $3 million) per occurrence and __(up to $6 million) annual aggregate for nonsudden occurrences, except that the Fund is not established for the benefit of third parties for the following:

(I) Bodily injury or property damage for which (insert Grantor) is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that (insert Grantor) would be obligated to pay in the absence of the contract or agreement.

(II) Any obligation of (insert Grantor) under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(III) Bodily injury to:

I. An employee of (insert Grantor) arising from, and in the course of, employment by (insert Grantor); or

II. The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by (insert Grantor). This exclusion applies:

A. Whether (insert Grantor) may be liable as an employer or in any other capacity; and

B. To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in subitems I and II.

(IV) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle or watercraft.

(V) Property damage to:

I. Any property owned, rented, or occupied by (insert Grantor);

II. Premises that are sold, given away or abandoned by (insert Grantor) if the property damage arises out of any part of those premises;

III. Property loaned to (insert Grantor);

IV. Personal property in the care, custody or control of (insert Grantor);

V. That particular part of real property on which (insert Grantor) or any contractors or subcontractors working directly or indirectly on behalf of (insert Grantor) are performing operations, if the property damage arises out of these operations.

In the event of combination with another mechanism for liability coverage, the fund shall be considered (insert "primary" or "excess") coverage.

The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. Such property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the Department.

SECTION 4
PAYMENT FOR BODILY INJURY OR PROPERTY DAMAGE

The Trustee shall satisfy a third party liability claim by making payments from the Fund only upon receipt of one of the following documents:

(I) Certification from the Grantor and the third party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in parentheses are to be replaced with the relevant information and the parentheses deleted.

CERTIFICATION OF VALID CLAIM

The undersigned, as parties (insert Grantor) and (insert name and address of third party claimant(s)), hereby certify that the claim of bodily injury and/or property damage caused by a (sudden or nonsudden) accidental occurrence arising from operating (Grantor's) hazardous waste treatment, storage, or disposal facility should be paid in the amount of $(_____).

(Signatures)_____
Grantor

(Signatures)_____
Claimant(s)

(II) A valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Grantor's facility or group of facilities.

SECTION 5
PAYMENTS COMPRISING THE FUND

Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

SECTION 6
TRUSTEE MANAGEMENT

The Trustee shall invest and reinvest the principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstance then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(I) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2.(a), shall not be acquired or held unless they are securities or other obligations of the Federal or a State government;

(II) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or State government; and

(III) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

SECTION 7
COMMINGLING AND INVESTMENT

The Trustee is expressly authorized in its discretion:

(I) To transfer from time to time any or all of the assets of the Fund to any common commingled or collective trust fund created by the Trustee in which the fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(II) To purchase shares in any investment company registered under the Investment Company Act of l940, 15 U.S.C. 81a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

SECTION 8
EXPRESS POWERS OF TRUSTEE

Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(I) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(II) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(III) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(IV) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and

(V) To compromise or otherwise adjust all claims in favor of or against the Fund.

SECTION 9
TAXES AND EXPENSES

All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

SECTION 10
ANNUAL VALUATIONS

The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the Division Director a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the Division Director shall constitute a conclusively binding assent by the Grantor barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

SECTION 11
ADVICE OF COUNSEL

The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

SECTION 12
TRUSTEE COMPENSATION

The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

SECTION 13
SUCCESSOR TRUSTEE

The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the Division Director, and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this SECTION shall be paid as provided in SECTION 9.

SECTION 14
INSTRUCTIONS TO THE TRUSTEE

All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendments to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the Division Director to the Trustee shall be in writing, signed by the Commissioner of the Tennessee Department of Environment and Conservation or his designee, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Department hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or the Department, except as provided for herein.

SECTION 15
NOTICE OF NONPAYMENT

If a payment for bodily injury or property damage is made under SECTION 4 of this trust, the Trustee shall notify the Grantor of such payment and the amount(s) thereof within five (5) working days. The Grantor shall, on or before the anniversary date of the establishment of the Fund following such notice, either make payments to the Trustee in amounts sufficient to cause the trust to return to its value immediately prior to the payment of claims under SECTION 4, or shall provide written proof to the Trustee that other financial assurance for liability coverage has been obtained equalling the amount necessary to return the trust to its value prior to the payment of claims. If the Grantor does not either make payments to the Trustee or provide the Trustee with such proof, the Trustee shall within 10 working days after the anniversary date of the establishment of the Fund provide a written notice of nonpayment to the Division Director.

SECTION 16
AMENDMENT OF AGREEMENT

This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Commissioner of the Tennessee Department of Environment and Conservation or his designee, or by the Trustee and the Commissioner of the Tennessee Department of Environment and Conservation or his designee if the Grantor ceases to exist.

SECTION 17
IRREVOCABILITY AND TERMINATION

Subject to the right of the parties to amend this Agreement as provided in SECTION 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Commissioner of the Tennessee Department of Environment and Conservation or his designee, or by the Trustee and the Commissioner of the Tennessee Department of Environment and Conservation or his designee, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

The Commissioner of the Tennessee Department of Environment and Conservation or his designee will agree to termination of the Trust when the owner or operator substitutes alternate financial assurance as specified in this SECTION.

SECTION 18
IMMUNITY AND INDEMNIFICATION

The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the Commissioner of the Tennessee Department of Environment and Conservation or his designee issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

SECTION 19
CHOICE OF LAW

This Agreement shall be administrated, construed, and enforced according to the laws of the State of (enter name of State).

SECTION 20
INTERPRETATION

As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each SECTION of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness Whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in Tennessee Rule 1200-01-11-.06(8)(p)13 as such regulations were constituted on the date first above written.

(Signature of Grantor)_____

(Title)_____

Attest:_____

(Title)_____
(Seal)

(Signature of Trustee)_____

Attest:_____

(Title)_____
(Seal)

(ii) CERTIFICATION OF ACKNOWLEDGEMENT

The following is an example of the certification of acknowledgement which must accompany the trust agreement for a trust fund as specified in Rule 1200-01-11-.05(8)(n)10 or part (n)10 of this paragraph. State requirements may differ on the proper content of this acknowledgement.

State of_____

County of_____

On this (date), before me personally came (owner or operator) to me known, who, being by me duly sworn, did depose and say that she/he resides at (address), that she/he is (title) of (corporation), the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such

instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

Subscribed and sworn to before me this _____day of _____, ____

_____

Notary Public

My commission expires on the _____day of _____, _____

* * * * * * * * * * * *

14. STANDBY TRUST AGREEMENT

(i) A standby trust agreement, as specified in Rule 1200-01-11-.05(8)(n)8 or part (n)8 of this paragraph, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

STANDBY TRUST AGREEMENT

Trust Agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator] a [name of a State] [insert "corporation," "partnership," "association," or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert, "incorporated in the State of _____" or "a national bank"], the "trustee."

Whereas the Tennessee Solid Waste Disposal Control Board (hereinafter Board) has established certain regulations applicable to the Grantor, requiring that an owner or operator of a hazardous waste management facility or group of facilities must demonstrate financial responsibility for bodily and property damage to third parties caused by sudden accidental and/or nonsudden accidental occurrences arising from operations of the facility or group of facilities.

Whereas, the Grantor has elected to establish a standby trust into which the proceeds from a letter of credit may be deposited to assure all or part of such financial responsibility for the facilities identified herein.

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee.

Now, therefore, the Grantor and the Trustee agree as follows:

SECTION 1
DEFINITIONS

As used in this Agreement:

(I) The term Grantor means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(II) The term Trustee means the Trustee who enters into this Agreement and any successor Trustee.

SECTION 2
IDENTIFICATION OF FACILITIES

This agreement pertains to the facilities identified on attached schedule A [on schedule A, for each facility list the EPA Identification Number, name, and address of the facility(ies) and the amount of liability coverage, or portions thereof, if more than one instrument affords combined coverage as demonstrated by this Agreement].

SECTION 3
ESTABLISHMENT OF FUND

The Grantor and the Trustee hereby establish a standby trust fund, hereafter the "Fund," for the benefit of any and all third parties injured or damaged by [sudden and/or nonsudden] accidental occurrences arising from operation of the facility(ies) covered by this guarantee, in the amounts of ___[up to $1 million] per occurrence and _____[up to $2 million] annual aggregate for sudden accidental occurrences and _____ [up to $3 million] per occurrence and __ [up to $6 million] annual aggregate for nonsudden occurrences, except that the Fund is not established for the benefit of third parties for the following:

(I) Bodily injury or property damage for which [insert Grantor] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert Grantor] would be obligated to pay in the absence of the contract or agreement.

(II) Any obligation of [insert Grantor] under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(III) Bodily injury to:

I. An employee of [insert Grantor] arising from, and in the course of, employment by [insert Grantor]; or

II. The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert Grantor].

This exclusion applies:

A. Whether [insert Grantor] may be liable as an employer or in any other capacity; and

B. To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in subitems I and II.

(IV) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle or watercraft.

(V) Property damage to:

I. Any property owned, rented, or occupied by [insert Grantor];

II. Premises that are sold, given away or abandoned by [insert Grantor] if the property damage arises out of any part of those premises;

III. Property loaned by [insert Grantor];

IV. Personal property in the care, custody or control of [insert Grantor];

V. That particular part or real property on which [insert Grantor] or any contractors or subcontractors working directly or indirectly on behalf of [insert Grantor] are performing operations, if the property damage arises out of these operations.

In the event of combination with another mechanism for liability coverage, the fund shall be considered [insert "primary" or "excess"] coverage.

The Fund is established initially as consisting of the proceeds of the letter of credit deposited into the Fund. Such proceeds and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established the Board.

SECTION 4
PAYMENT FOR BODILY INJURY OR PROPERTY DAMAGE

The Trustee shall satisfy a third party liability claim by drawing on the letter of credit described in Schedule B and by making payments from the Fund only upon receipt of one of the following documents:

(I) Certification from the Grantor and the third party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Certification of Valid Claim

The undersigned, as parties [insert Grantor] and [insert name and address of third party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operating [Grantor's] hazardous waste treatment, storage, or disposal facility should be paid in the amount of $[ ].

[Signature]_____
Grantor

[Signatures]_____
Claimant(s)

(II) A valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Grantor's facility or group of facilities.

SECTION 5
PAYMENTS COMPRISING THE FUND

Payments made to the Trustee for the Fund shall consist of the proceeds from the letter of credit drawn upon by the Trustee in accordance with the requirements of Tennessee Rule 1200-01-11-.06(8)(p)14 and Section 4 of this Agreement.

SECTION 6
TRUSTEE MANAGEMENT

The Trustee shall invest and reinvest the principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his duties with respect to the trust fund in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(I) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2(a), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government;

(II) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or a State government; and

(III) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

SECTION 7
COMMINGLING AND INVESTMENT

The Trustee is expressly authorized in its discretion:

(I) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(II) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

SECTION 8
EXPRESS POWERS OF TRUSTEE

Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(I) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(II) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(III) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depositary even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depositary with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve Bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(IV) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and

(V) To compromise or otherwise adjust all claims in favor of or against the Fund.

SECTION 9
TAXES AND EXPENSES

All taxes of any kind that may be assessed or levied against or in respect to the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements to the Trustee shall be paid from the Fund.

SECTION 10
ADVICE OF COUNSEL

The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this

Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

SECTION 11
TRUSTEE COMPENSATION

The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

SECTION 12
SUCCESSOR TRUSTEE

The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the Director of the Solid Waste Management Division of the Tennessee Department of Environment and Conservation (TDEC) and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

SECTION 13
INSTRUCTIONS TO THE TRUSTEE

All orders, requests, certifications of valid claims, and instructions to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendments to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the TDEC hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or TDEC, except as provided for herein.

SECTION 14
AMENDMENT OF AGREEMENT

This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and TDEC, or by the Trustee and TDEC if the Grantor ceases to exist.

SECTION 15
IRREVOCABILITY AND TERMINATION

Subject to the right of the parties to amend this Agreement as provided in Section 14, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and TDEC, or by the Trustee

and TDEC, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be paid to the Grantor.

The Regional Administrator will agree to termination of the Trust when the owner or operator substitutes alternative financial assurance as specified in this SECTION.

SECTION 16
IMMUNITY AND INDEMNIFICATION

The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor and TDEC issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

SECTION 17
CHOICE OF LAW

This Agreement shall be administered, construed, and enforced according to the laws of the State of Tennessee.

SECTION 18
INTERPRETATION

As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The description headings for each Section of this Agreement shall not affect the interpretation of the legal efficacy of this Agreement.

In Witness Whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in Tennessee Rule 1200-01-11-.06(8)(p)14 as such regulations were constituted on the date first above written.

[Signature of Grantor]_____

[Title]_____

Attest:_____

[Title]_____

[Seal]

[Signature of Trustee]_____

Attest:_____

[Title]_____

[Seal]

(ii) CERTIFICATION OF ACKNOWLEDGEMENT

The following is an example of the certification of acknowledgement which must accompany the trust agreement for a standby trust fund as specified in Rule 1200-01-11-.05(8)(n)8 or part (n)8 of this paragraph. State requirements may differ on the proper content of this acknowledgement.

State of_____

County of_____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

Subscribed and sworn to before me this _____day of _____, ____

_____

Notary Public

My commission expires on the _____day of _____, _____

* * * * * * * * * * * *

15. PERSONAL BOND SUPPORTED BY SECURITIES

Date bond executed: _____

Effective date: _____

Principal: (legal name and address of operator)_____ _____

Type of organization: (insert "individual," "joint venture," "partnership" or "corporation")_____ _____

State of incorporation: _____

E.P.A. I.D. number, name, address, and closure and post-closure amount(s) for each facility guaranteed by this bond (indicate closure and post-closure amounts separately): _____ _____

Total penal sum of bond: _____

Type(s) of Securities: _____ _____ _____ _____ _____

Serial Number(s) of Security(ies):_____

KNOW ALL PERSONS BY THESE PRESENTS, The Principal, hereto are firmly bound to the Tennessee Department of Environment and Conservation (hereinafter called the Department), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally for the payment of the full amount of the penal sum.

WHEREAS said Principal is required, under the Tennessee Hazardous Waste Management Act as amended (THWMA), to have a permit in order to operate each solid waste disposal facility identified above, and

WHEREAS said principal is required to provide financial assurance for proper operation, closure and post-closure care as a condition of the permit;

NOW, THEREFORE, the conditions of this obligation are such that if the Principal shall properly operate the solid waste disposal facility and perform closure, whenever required to do so, of each facility for which this bond guarantees proper operation and closure, in accordance with the closure/post-closure plan and other requirements of the permit as such plan and permit may be amended, pursuant to all applicable laws, statutes, rules, and regulations, as such laws, statutes, rules, and regulations may be amended.

AND, if the Principal shall faithfully operate the solid waste disposal facility and perform post-closure care of each facility for which this bond guarantees proper operation, closure and post-closure, in accordance with the closure/post-closure care plan and other requirements of the permit, as such plan and permit may be amended, and pursuant to all applicable laws, statutes, rules, and regulation, as such laws, statutes, rules, and regulations may be amended, the liability of the Principal assumed in the provisioning of this bond shall be discharged. The securities supporting the same and any interest from the securities shall be returned to the Principal upon demand.

Upon notification by the Commissioner that the Principal has been found in violation of his permit, the Act, or Rules promulgated pursuant thereto, the Principal shall, as directed by the Commissioner, operate the facility, perform closure/post-closure in accordance with the closure/post-closure care plan and other permit requirements, or forfeit all or a portion of the penal sum of this bond to the Department.

The Principal hereby waive(s) notification of amendments to closure/post-closure care plans, permits, applicable laws, statutes, rules, and regulations and agrees that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Principal shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond.

Initial amount of Security(ies) being assigned to the certification of which is being deposited with the Department $_____

The Principal has this day assigned in blank, and deposited with the Department, (list the type of security)

_____

The Department is hereby authorized to sell, at public or private sale, said security(ies) if the Principal fails to perform any condition of this bond. The proceeds of any such sale are hereby forfeited to the Department.

The Principal hereto attaches the appropriate demonstration of investment analysis proving that the initial amount of the Security(ies) (as listed in the previous paragraph) $ _____ will with accrued interest equal or exceed the total penal sum of this bond at the predetermined time of closure of the facility and will provide annual amounts, as accrued, equivalent to the cost of post-closure care annually and summarily for the duration of the post-closure care. The Principal further agrees that at such time as the rate of inflation as published by the United States Department of Commerce exceeds the index on which the investment analysis is herein calculated, that the Principal shall review, along with the Department, whether the amount of the Security(ies) herewith along deposited with the Department along with accrued interest, will at least equal the total amount of the penal sum of the bond, as calculated with the increased rate of inflation. At such time, if it occurs, that the initial amount of the Security(ies) must be increased due to an increased rate of inflation, as published by the U.S. Department of Commerce, the Principal shall so adjust, shall be performed within 60 days of the said publishing of such increase in the national rate of inflation.

IN WITNESS WHEREOF, the Principal has executed this PERFORMANCE BOND and has affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this personal bond on behalf of the Principal and that the wording of this personal bond is consistent with Department Rule 1200-1-7-.03(3) as such regulation was constituted on the date this bond was executed.

(Signature(s))_____
_____
Principal
(Name(s))_____
_____
(Title(s))_____
_____
(Corporate seal)

* * * * * * * * * * * *

16. *COMBINED HAZARDOUS AND SOLID WASTE FINANCIAL TEST

(i) Letter From Chief Financial Officer (Closure and/or Post-Closure)

(ii) Letter From Chief Financial officer (Liability Coverage or Liability Coverage and Closure/Post Closure)

(iii) Corporate Guarantee for Closure or Post-Closure Care

* Note: Copies of the three financial instrument forms listed above may be obtained by calling the Financial Assurance Office of the Division of Solid Waste Management at 615-532-0780 or writing to :

Attn: Financial Assurance Office
Tennessee Department of Environment & Conservation
Division of Solid Waste Management
L & C Tower, 5th Floor

401 Church Street
Nashville, TN 37243-1535

* * * * * * * * * * * *

(9) Use and Management of Containers [40 CFR 264 Subpart I]

(a) Applicability [40 CFR 264.170]

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.

(Comment: Under Rules 1200-01-11-.02(1)(g) and .02(4)(d)3, if a hazardous waste is emptied from a container the residue remaining in the container is not considered a hazardous waste if the container is "empty" as defined in Rule 1200-01-11-.02(1)(g). In that event, management of the container is exempt from the requirements of this paragraph.)

(b) Condition of Containers [40 CFR 264.171]

If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) 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 Containers [40 CFR 264.172]

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 264.173]

A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste.

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: Reuse 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 264.174]

At least weekly, the owner or operator must inspect areas where containers are stored, except for Performance Track member facilities, that may conduct inspections at least once each month, upon approval by the Regional Administrator. To apply for reduced inspection frequencies, the Performance Track member facility must follow the procedures identified in subpart (2)(f)2(v) of this Rule. The owner or operator must look for leaking containers and for deterioration of containers and the containment system caused by corrosion or other factors.

(Comment: See part (2)(f)3 of this Rule and subparagraph (b) of this paragraph for remedial action required if deterioration or leaks are detected.)

(f) Containment [40 CFR 264.175]

1. Container storage areas must have a containment system that is designed and operated in accordance with part 2 of this subparagraph, except as otherwise provided by part 3 of this subparagraph.

2. A containment system must be designed and operated as follows:

(i) A base must underlie the containers which is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed;

(ii) The base must be sloped or the containment system must be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids;

(iii) The containment system must have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container, whichever is greater. Containers that do not contain free liquids need not be considered in this determination;

(iv) Run-on into the containment system must be prevented unless the collection system has sufficient excess capacity in addition to that required in subpart (iii) of this part to contain any run-on which might enter the system; and

(v) Spilled or leaked waste and accumulated precipitation must be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system.

(Comment: If the collected material is a hazardous waste under Rule 1200-01-11-.02, it must be managed as a hazardous waste in accordance with all applicable requirements of Rules 1200-01-11-.03 through .07 and .09. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of section 402 of the Clean Water Act, as amended.)

3. Storage areas that store containers holding only wastes that do not contain free liquids need not have a containment system defined by part 2 of this subparagraph, except as provided by part 4 of this subparagraph or provided that:

(i) The storage area is sloped or is otherwise designed and operated to drain and remove liquid resulting from precipitation, or

(ii) The containers are elevated or are otherwise protected from contact with accumulated liquid.

4. Storage areas that store containers holding the wastes listed below that do not contain free liquids must have a containment system defined by part 2 of this subparagraph:

(i) F020, F021, F022, F023, F026, and F027.

(ii) (Reserved)

(g) Special Requirements for Ignitable or Reactive Waste [40 CFR 264.176]

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 264.177]

1. Incompatible wastes, or incompatible wastes and materials (see Appendix V in paragraph (57) 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.

(Comment: As required by subparagraph (2)(d) of this Rule, the waste analysis plan must include analyses needed to comply with this subparagraph. Also, part (2)(h)3 of this Rule requires wastes analyses, trial tests or other documentation to assure compliance with part (2)(h)2 of this Rule. As required by subparagraph (5)(d) of this Rule, the owner or operator must place the results of each waste analysis and trial test, and any documented information, in the operating record of the facility.)

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 section is to prevent fires, explosions, gaseous emission, 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) Closure [40 CFR 264.178]

At closure, all hazardous waste and hazardous waste residues must be removed from the containment system. Remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues must be decontaminated or removed.

(Comment: At closure, as throughout the operating period, unless the owner or operator can demonstrate in accordance with Rule 1200-01-11-.02(1)(c)4 that the solid waste removed from the containment system 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 through .07 and .09.)

(j) Air Emission Standards [40 CFR 264.179]

The owner or operator shall manage all hazardous waste placed in a container in accordance with the applicable requirements of paragraphs (30), (31), and (32) of this Rule.

(10) Tank Systems [40 CFR 264 Subpart J]

(a) Applicability [40 CFR 264.190]

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 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(2)(b)1.)

2. Tank systems, including sumps, as defined in Rule 1200-01-11-.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 such collection devices or systems used in conjunction with drip pads, as defined in Rule 1200-01-11-.01(2)(a) and regulated under paragraph (26) of this Rule, must meet the requirements of this paragraph.

(b) Assessment of Existing Tank System's Integrity [40 CFR 264.191]

1. For each existing tank system that does not have secondary containment meeting the requirements of subparagraph (10)(d) of this Rule, 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(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 and 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, the assessment must include 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, and

(II) For other than non-enterable underground tanks and for ancillary equipment, this assessment must include either a leak test, as described above, or other integrity examination, that is certified

by a qualified Professional Engineer in accordance with Rule 1200-01-11-.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 other than a leak test.)

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 264.192]

1. Owners or operators of new tank systems or components must obtain and submit to the Commissioner, at time of submittal of Part B information, a written assessment, reviewed and certified by a qualified Professional Engineer, in accordance with Rule 1200-01-11-.07(2)(a)10, attesting that the tank system has sufficient structural integrity and is acceptable for the storing and treating of hazardous waste. The assessment must show 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 to ensure that it will not collapse, rupture, or fail. This assessment, which will be used by the Commissioner to review and approve or disapprove the acceptability of the tank system design, must include, at a minimum, the following information:

(i) Design standard(s) according to which tank(s) and/or the ancillary equipment are 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 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. Existence of stray electric current;

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, fiberglass reinforced plastic, etc.;

II. Corrosion-resistant coating (such as epoxy, fiberglass, etc.) with cathodic protection (e.g., impressed current or sacrificial anodes); and

III. Electrical isolation devices such as insulating joints, flanges, etc.

(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 adversely 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 dislodgment where the tank system is placed in a saturated zone, or is located within a seismic fault zone subject to the standards of part (2(i)1 of this Rule; 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 or components, must inspect the system 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/installation.

All discrepancies must be remedied before the tank system is covered, enclosed, or placed in use.

3. New tank systems or components 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 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 into 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 Piping," and ANSI Standard B31.4 "Liquid Petroleum Transportation Piping 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 recommended by an independent corrosion expert, based on the information provided under subpart 1(iii) of this subparagraph, or other corrosion protection if the Commissioner believes other corrosion protection is necessary 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, that 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(2)(a)10.

(d) Containment and Detection of Releases [40 CFR 264.193]

1. In order to prevent the release of hazardous waste or hazardous constituents to the environment, secondary containment that meets the requirements of this section 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 two 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 wastes(s) to be placed in the tank system and must have sufficient strength and thickness to prevent failure owing to pressure gradients (including static head and external hydrological forces), physical contact with the waste to which it is exposed, climatic conditions, 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, 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 or secondary containment structure or the presence of any release of hazardous waste or accumulated liquid in the secondary containment system within 24 hours, or at the earliest practicable time if the owner or operator can demonstrate to the Commissioner that existing detection technologies or site conditions will not allow detection of a release within 24 hours; and

(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 and the environment, if the owner or operator can demonstrate to the Commissioner that 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, it is subject to management as a hazardous waste in accordance with all applicable requirements of Rules 1200-01-11-.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 a Publicly Owned Treatment Works (POTW), it is subject to the requirements of 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 surround the tank completely and to cover all surrounding earth likely to come into contact with the waste if the waste is 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(3)(b); or

II. Meets the definition of reactive waste under Rule 1200-01-11-.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 completely enveloped 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 of 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 concludes, that the existing detection technology or site conditions would 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 Tanks" may be used as guidelines for aspects of the design of underground steel double-walled tanks.)

6. Ancillary equipment must be provided with 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 other 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 that alternative design and operating practices, together with location characteristics, will prevent the migration of any 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 subparagraph.

(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 wastes;

(II) The proposed alternate design and operation;

(III) The hydrogeologic setting of the facility, including the thickness of soils present 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 ground-water users,

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 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 requirement 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 (g)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;

(II) For new tank systems, at least 30 days prior to entering into a contract for installation;

(ii) As part of the notification, the owner or operator must also submit to 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(1) or 7(ii) of this subparagraph;

(iii) The demonstration for a variance must be completed within 180 days after notifying the Commissioner of an intent to conduct the demonstration; and

(iv) If a variance is granted under this paragraph, the Commissioner will require the permittee to construct and operate the tank system in the manner that was demonstrated to meet the requirements for the variance.

9. All tank systems, until such time as secondary containment that meets 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 or other tank integrity

method, as approved or required by the Commissioner, must be conducted at least annually.

(ii) For other than non-enterable underground tanks, the owner or operator must either conduct a leak test as in subpart (i) of this part or develop a schedule and procedure for an assessment of the overall condition of the tank system by a qualified Professional Engineer. The schedule and procedure must be adequate to detect obvious cracks, leaks, and corrosion or erosion that may lead to cracks and leaks. 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. The frequency of these assessments must be based on the material of construction of the tank and its ancillary equipment, the age of the system, the type of corrosion or erosion protection used, the rate of corrosion or erosion observed during the previous inspection, and the characteristics of the waste being stored or treated.

(iii) For ancillary equipment, a leak test or other integrity assessment as approved by the Commissioner must be conducted at least annually.

(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 for assessing the overall condition of the tank system.)

(iv) 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.

(v) 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 264.194]

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 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 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 264.195]

1. The owner or operator must develop and follow a schedule and procedure for inspecting overfill controls.

2. The owner or operator must inspect 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 leak. Also, Federal 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.)

3. In addition, except as noted under part 4 of this subparagraph , the owner or operator must inspect at least once each operating day:

   (i) Above ground portions of the tank system, if any, to detect corrosion or releases of waste.

   (ii) 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).

4. Owners or operators of tank systems that either use leak detection systems 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 3(i) and 3(ii) 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. 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.

6. Ancillary equipment that is not provided with secondary containment, as described in subparts (d)6(i) through (d)6(iv) of this subparagraph, must be inspected at least once each operating day.

7. 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.)

8. The owner or operator must document in the operating record of the facility an inspection of those items in parts 1 through 3 of this subparagraph.

(g) Response to Leaks or Spills and Disposition of Leaking or Unfit-for-use Tank Systems [40 CFR 264.196]

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/operator must, within 24 hours after detection of the leak or, if the owner/operator demonstrates that it 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 material released 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/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, must be reported to the Commissioner within 24 hours of its detection. If the release has been reported to the National Response Center pursuant to Federal 40 CFR part 302 or to the Tennessee Emergency Management Agency that report will satisfy this requirement.

(ii) A leak or spill of hazardous waste is exempted from the requirements of this part if it is:

(I) Less than or equal to a quantity of one (1) pound, and

(II) Immediately contained and cleaned up.

(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 populated areas; and

(V) Description of response actions taken or planned.

5. Provision of secondary containment, repair, or closure

(i) Unless the owner/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 that can be inspected visually. 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/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(2)(a)10 that the repaired system is capable of handling hazardous wastes without release for the intended life of the system. This certification must 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, Federal 40 CFR part 302 may require the owner or operator to notify the National Response Center of certain releases and Section 304 of Title III of the Superfund Amendments and Reauthorization Act of 1986 may require notification of the Tennessee Emergency Management Agency.)

(h) Closure and Post-closure Care [40 CFR 264.197]

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(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 that does not have secondary containment that meets the requirements of parts (d)2 through (d)6 of this paragraph and has not been granted a variance 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 those 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 264.198]

1. Ignitable or reactive waste must not be placed in tank systems, 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 paragraph (3)(b) or (3)(d) of Rule 1200-01-11-.02, 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 a tank 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(2)(b)).

(j) Special Requirements for Incompatible Wastes [40 CFR 264.199]

1. Incompatible wastes, or incompatible wastes 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) Air Emission Standards [40 CFR 264.200]

The owner or operator shall manage all hazardous waste placed in a tank in accordance with the applicable requirements of paragraphs (30), (31), and (32) of this Rule.

(11) Surface Impoundments [40 CFR 264 Subpart K]

(a) Applicability [40 CFR 264.220]

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 subparagraphs (1)(b) and (1)(d) of this Rule provide otherwise.

(b) Design and Operating Requirements [40 CFR 264.221]

1. Any surface impoundment that is not covered by part 3 of this subparagraph or Rule 1200-01-11-.05(11)(b) must have a liner for all portions of the impoundment (except for existing portions of such impoundments). The liner must be designed, constructed, and installed to prevent any migration of wastes out of the impoundment to the adjacent subsurface soil or ground water or surface water at any time during the active life (including the closure period) of the impoundment. The liner may be constructed of materials that may allow wastes to migrate into the liner (but not into the adjacent subsurface soil or ground water or surface water) during the active life of the facility, provided that the impoundment is closed in accordance with subpart (i)1(i) of this paragraph. For impoundments that will be closed in accordance with subpart (i)1(ii), the liner must be constructed of materials that can prevent wastes from migrating into the liner 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 leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

(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 likely to be in contact with the waste or leachate.

2. The owner or operator will be exempted from the requirements of part 1 of this subparagraph if the Commissioner finds, based on a demonstration by the owner or operator, that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents (see subparagraph (6)(d) of this Rule) into the ground water or surface water at any future time. In deciding whether to grant an exemption, the Commissioner will consider:

(i) The nature and quantity of the wastes;

(ii) The proposed alternate design and operation;

(iii) The hydrogeologic setting of the facility, including the attenuative capacity and thickness of the liners and soils present between the impoundment and ground water or surface water; and

(iv) All other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to ground water or surface water.

3. The owner or operator of each new surface impoundment unit on which construction commences after January 29, 1992, each lateral expansion of a surface impoundment unit on which construction commences after July 29, 1992 and each replacement of an existing surface impoundment unit that is to commence reuse after July 29, 1992 must install two or more liners and a leachate collection and removal system between such liners. "Construction commences" is as defined in Rule 1200-01-11-.01(2)(a) under "existing facility".

(i) (I) The liner system must include:

I. A top liner designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into such liner during the active life and post-closure care period; and

II. A composite bottom liner, consisting of at least two components. The upper component must be designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and post-closure care period. The lower component must be designed and constructed of materials to minimize the migration of hazardous constituents if a breach in the upper component were to occur. The lower component must be constructed of at least 3 feet (91 cm) of compacted soil material with a hydraulic conductivity of no more than 1×10^{-7} cm/sec.

(II) The liners must comply with subparts (b)1(i),(ii) and (iii) of this paragraph.

(ii) The leachate collection and removal system between the liners, and immediately above the bottom composite liner in the case of multiple leachate collection and removal systems, is also a leak detection system. This leak detection system must be capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and post-closure care period. The requirements for a leak detection system in this subpart are satisfied by installation of a system that is, at a minimum:

(I) Constructed with a bottom slope of one percent or more;

(II) Constructed of granular drainage materials with a hydraulic conductivity of 1×10^{-1} 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^{-4} m^2 /sec or more;

(III) Constructed of materials that are chemically resistant to the waste managed in the surface impoundment and the leachate expected to be generated, and of sufficient strength and

thickness to prevent collapse under the pressures exerted by overlying wastes and any waste cover materials or equipment used at the surface impoundment;

(IV) Designed and operated to minimize clogging during the active life and post-closure care period; and

(V) Constructed with sumps and liquid removal methods (e.g., pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit must have its own sump(s). The design of each sump and removal system must provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed.

(iii) The owner or operator shall collect and remove pumpable liquids in the sumps to minimize the head on the bottom liner.

(iv) The owner or operator of a leak detection system that is not located completely above the seasonal high water table must demonstrate that the operation of the leak detection system will not be adversely affected by the presence of ground water.

4. The Commissioner may approve alternative design or operating practices to those specified in part 3 of this subparagraph if the owner or operator demonstrates to the Commissioner that such design and operating practices, together with location characteristics:

(i) Will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as the liners and leachate collection and removal system specified in part 3 of this subparagraph; and

(ii) Will allow detection of leaks of hazardous constituents through the top liner at least as effectively.

5. The double liner requirement set forth in part 3 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 EP toxicity characteristic in Rule 1200-01-11-.02(3)(e); 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 3 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 will 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(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;

(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.

6. The owner or operator of any replacement surface impoundment unit is exempt from part 3 of this subparagraph if:

(i) The existing unit was constructed in compliance with the design standards of paragraph (11) of this Rule; and

(ii) There is no reason to believe that the liner is not functioning as designed.

7. A surface impoundment must be designed, constructed, maintained, and operated to prevent overtopping resulting from normal or abnormal operations; overfilling; wind and wave action; rainfall; run-on; malfunctions of level controllers, alarms, and other equipment; and human error.

8. A surface impoundment must have dikes that are designed, constructed, and maintained with sufficient structural integrity to prevent massive failure of the dikes. In ensuring structural integrity, it must not be presumed that the liner system will function without leakage during the active life of the unit.

9. The Commissioner will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this subparagraph are satisfied.

(c) Action Leakage Rate [40 CFR 264.222]

1. The Commissioner shall approve an action leakage rate for surface impoundment units subject to part (b)3 or 4 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.).

2. 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 (g)4 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 is closed in accordance with part (i)2 of this paragraph, monthly during the post-closure care period when monthly monitoring is required under part (g)4 of this paragraph.

(d) Response Actions [40 CFR 264.223]

1. The owner or operator of surface impoundment units subject to parts (b)3 or 4 of this paragraph must have an approved response action plan before receipt of waste. 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)-(f) (RESERVED) [40 CFR 264.224-264.225]

(g) Monitoring and Inspection [40 CFR 264.226]

1. During construction and installation, liners (except in the case of existing portions of surface impoundments exempt from part (b)1 of this paragraph) 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:

   (i) Synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters; and

   (ii) Soil-based and admixed liners and covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the liner or cover.

2. While a surface impoundment 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 overtopping control systems;

   (ii) Sudden drops in the level of the impoundment's contents; and

   (iii) Severe erosion or other signs of deterioration in dikes or other containment devices.

3. Prior to the issuance of a permit, and after any extended period of time (at least six months) during which the impoundment was not in service, the owner or operator must obtain a certification from a qualified engineer that the impoundment's dike, including that portion of any dike which provides freeboard, has structural integrity. The certification must establish, in particular, that the dike:

   (i) Will withstand the stress of the pressure exerted by the types and amounts of wastes to be placed in the impoundment; and

   (ii) Will not fail due to scouring or piping, without dependence on any liner system included in the surface impoundment construction.

4. (i) An owner or operator required to have a leak detection system under parts (b)3 or 4 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.

(h) Emergency Repairs; Contingency Plans [40 CFR 264.227]

1. A surface impoundment must be removed from service in accordance with part 2 of this subparagraph when:

(i) The level of liquids in the impoundment suddenly drops and the drop is not known to be caused by changes in the flows into or out of the impoundment; or

(ii) The dike leaks.

2. When a surface impoundment must be removed from service as required by part 1 of this subparagraph, the owner or operator must:

(i) Immediately shut off the flow or stop the addition of wastes into the impoundment;

(ii) Immediately contain any surface leakage which has occurred or is occurring;

(iii) Immediately stop the leak;

(iv) Take any other necessary steps to stop or prevent catastrophic failure;

(v) If a leak cannot be stopped by any other means, empty the impoundment; and

(vi) Notify the Commissioner of the problem in writing within seven days after detecting the problem.

3. As part of the contingency plan required in paragraph 4 of this Rule, the owner or operator must specify a procedure for complying with the requirements of part 2 of this subparagraph.

4. No surface impoundment that has been removed from service in accordance with the requirements of this section may be restored to service unless the portion of the impoundment which was failing is repaired and the following steps are taken:

(i) If the impoundment was removed from service as the result of actual or imminent dike failure, the dike's structural integrity must be recertified in accordance with part (g)3 of this paragraph.

(ii) If the impoundment was removed from service as the result of a sudden drop in the liquid level, then:

(I) For any existing portion of the impoundment, a liner must be installed in compliance with part (b)1 of this paragraph; and

(II) For any other portion of the impoundment, the repaired liner system must be certified by a qualified engineer as meeting the design specifications approved in the permit.

5. A surface impoundment that has been removed from service in accordance with the requirements of this subparagraph and that is not being repaired must be closed in accordance with the provisions of subparagraph (i) of this paragraph.

(i) Closure and Post-closure Care [40 CFR 264.228]

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(1)(c)4 applies; or

(ii) (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 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 final 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. If some waste residues or contaminated materials are left in place at final closure, the owner or operator must comply with all post-closure requirements contained in subparagraphs (7)(h) - (k) of this Rule, including maintenance and monitoring throughout the post-closure care period (specified in the permit under subparagraph (7)(h) of this Rule). The owner or operator must:

   (i) Maintain the integrity and effectiveness of the final cover, including making repairs to the cap 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 (b)3(ii)(IV), subpart (b)3(iii), and part (g)4 of this Rule, 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.

3. (i) If an owner or operator plans to close a surface impoundment in accordance with subpart 1(i) of this subparagraph, and the impoundment does not comply with the liner requirements of part (b)1 of this paragraph and is not exempt from them in accordance with part (b)2 of this paragraph, then:

      (I) The closure plan for the impoundment under subparagraph (7)(c) of this Rule must include both a plan for complying with subpart 1(i) of this subparagraph and a contingent plan for complying with subpart 1(ii) of this subparagraph in case not all contaminated subsoils can be practicably removed at closure; and

      (II) The owner or operator must 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 (8)(c) and (8)(e) of this Rule for closure and post-closure care of an impoundment subject to this paragraph 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 subpart 1(i) of this subparagraph.

(j) Special Requirements for Ignitable or Reactive Waste [40 CFR 264.229]

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, 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 Rules 1200-01-11-.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; or

3. The surface impoundment is used solely for emergencies.

(k) Special Requirements for Incompatible Wastes [40 CFR 264.230]

Incompatible wastes, or incompatible wastes and materials, (see Appendix V in paragraph (57) 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.

(l) Special Requirements for Hazardous Wastes F020, F021, F022, F023, F026, and F027 [40 CFR 264.231]

1. Hazardous Wastes F020, F021, F022, F023, F026, and F027 must not be placed in a surface impoundment unless the owner or operator operates the surface impoundment in accordance with a management plan for these wastes that is approved by the Commissioner pursuant to the standards set out in this paragraph, and in accord with all other applicable requirements of this Rule. The factors to be considered are:

(i) The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

(ii) The attenuative properties of underlying and surrounding soils or other materials;

(iii) The mobilizing properties of other materials co-disposed with these wastes; and

(iv) The effectiveness of additional treatment, design, or monitoring techniques.

2. The Commissioner may determine that additional design, operating, and monitoring requirements are necessary for surface impoundments managing hazardous wastes F020, F021, F022, F023, F026, and F027 in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

(m) Air Emission Standards [40 CFR 264.232]

The owner or operator shall manage all hazardous waste placed in a surface impoundment in accordance with the applicable requirements of paragraphs (31) and (32) of this Rule

(12) Waste Piles [40 CFR 264 Subpart L]

(a) Applicability [40 CFR 264.250]

1. The regulations in this paragraph apply to owners and operators of facilities that store or treat hazardous waste in piles, except as subparagraph (1)(b) and (1)(d) of this Rule provide otherwise.

2. The regulations in this paragraph do not apply to owners or operators of waste piles that are closed with wastes left in place. Such waste piles are subject to regulation under paragraph (14) of this Rule (Landfills).

3. The owner or operator of any waste pile that is inside or under a structure that provides protection from precipitation so that neither run-off nor leachate is generated is not subject to regulation under subparagraph (b) of this paragraph or under paragraph (6) of this Rule, provided that:

   (i) Liquids or materials containing free liquids are not placed in the pile;

   (ii) The pile is protected from surface water run-on by the structure or in some other manner;

   (iii) The pile is designed and operated to control dispersal of the waste by wind, where necessary, by means other than wetting; and

   (iv) The pile will not generate leachate through decomposition or other reactions.

(b) Design and Operating Requirements [40 CFR 264.251]

1. A waste pile (except for an existing portion of a waste pile) must have:

   (i) A liner that is designed, constructed, and installed to prevent any migration of wastes out of the pile into the adjacent subsurface soil or ground water or surface water at any time during the active life (including the closure period) of the waste pile. The liner may be constructed of materials that may allow waste to migrate into the liner itself (but not 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 leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

      (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 likely to be in contact with the waste or leachate; and

   (ii) A leachate collection and removal system immediately above the liner that is designed, constructed, maintained, and operated to collect and remove leachate from the pile. The Commissioner will specify design and operating conditions in the permit to ensure that the leachate depth

over the liner does not exceed 30 cm (one foot). The leachate collection and removal system must be:

(I) Constructed of materials that are:

I. Chemically resistant to the waste managed in the pile and the leachate expected to be generated; and

II. Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying wastes, waste cover materials, and by any equipment used at the pile; and

(II) Designed and operated to function without clogging through the scheduled closure of the waste pile.

2. The owner or operator will be exempted from the requirements of part 1 of this subparagraph, if the Commissioner finds, based on a demonstration by the owner or operator, that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents (see subparagraph (6)(d) of this Rule) into the ground water or surface water at any future time. In deciding whether to grant an exemption, the Commissioner will consider:

(i) The nature and quantity of the wastes;

(ii) The proposed alternate design and operation;

(iii) The hydrogeologic setting of the facility, including attenuative capacity and thickness of the liners and soils present between the pile and ground water or surface water; and

(iv) All other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to ground water or surface water.

3. The owner or operator of each new waste pile unit, each lateral expansion of a waste pile unit, and each replacement of an existing waste pile unit must install two or more liners and a leachate collection and removal system above and between such liners.

(i) (I) The liner system must include:

I. A top liner designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into such liner during the active life and post-closure care period; and

II. A composite bottom liner, consisting of at least two components. The upper component must be designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and post-closure care period. The lower component must be designed and constructed of materials to minimize the migration of hazardous constituents if a breach in the upper

component were to occur. The lower component must be constructed of at least 3 feet (91 cm) of compacted soil material with a hydraulic conductivity of no more than 1 x 10^{-7} cm/sec.

(II) The liners must comply with items 1(i)(I),(II), and (III) of this subparagraph.

(ii) The leachate collection and removal system immediately above the top liner must be designed, constructed, operated, and maintained to collect and remove leachate from the waste pile during the active life and post-closure care period. The Commissioner will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system must comply with items 3(iii)(III) and (IV) of this subparagraph.

(iii) The leachate collection and removal system between the liners, and immediately above the bottom composite liner in the case of multiple leachate collection and removal systems, is also a leak detection system. This leak detection system must be capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and post-closure care period. The requirements for a leak detection system in this paragraph are satisfied by installation of a system that is, at a minimum:

(I) Constructed with a bottom slope of one percent or more;

(II) Constructed of granular drainage materials with a hydraulic conductivity of 1 x 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 x 10^{-5} m^2/sec or more:

(III) Constructed of materials that are chemically resistant to the waste managed in the waste pile and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and equipment used at the waste pile;

(IV) Designed and operated to minimize clogging during the active life and post-closure care period; and

(V) Constructed with sumps and liquid removal methods (e.g., pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit must have its own sump(s). The design of each sump and removal system must provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed.

(iv) The owner or operator shall collect and remove pumpable liquids in the leak detection system sumps to minimize the head on the bottom liner.

(v) The owner or operator of a leak detection system that is not located completely above the seasonal high water table must demonstrate that

the operation of the leak detection system will not be adversely affected by the presence of ground water.

4. The Commissioner may approve alternative design or operating practices to those specified in part 3 of this subparagraph if the owner or operator demonstrates to the Commissioner that such design and operating practices, together with location characteristics:

   (i) Will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as the liners and leachate collection and removal systems specified in part 3 of this subparagraph; and

   (ii) Will allow detection of leaks of hazardous constituents through the top liner at least as effectively.

5. Part 3 of this subparagraph does not apply to monofills that are granted a waiver by the Commissioner in accordance with part (11)(b)5 of this Rule.

6. The owner or operator of any replacement waste pile unit is exempt from part 3 of this subparagraph if:

   (i) The existing unit was constructed in compliance with the design standards of paragraph (11) of this Rule; and

   (ii) There is no reason to believe that the liner is not functioning as designed.

7. 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.

8. 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.

9. 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.

10. If the pile contains any particulate matter which may be subject to wind dispersal, the owner or operator must cover or otherwise manage the pile to control wind dispersal.

11. The Commissioner will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this subparagraph are satisfied.

(c) Action Leakage Rate [40 CFR 264.252]

1. The Commissioner shall approve an action leakage rate for waste pile units subject to parts (b)3 or 4 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.).

2. 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 part (e)3 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.

(d) Response Actions [40 CFR 264.253]

1. The owner or operator of waste pile units subject to parts (b)3 or 4 of this paragraph must have an approved response action plan before receipt of waste. 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 long-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 264.254]

1. During construction or installation, liners (except in the case of existing portions of piles exempt from part (b)1 of this paragraph) 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:

(i) Synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters; and

(ii) Soil-based and admixed liners and covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the liner or cover.

2. While a waste pile 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) Proper functioning of wind dispersal control systems, where present; and

(iii) The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

3. An owner or operator required to have a leak detection system under part (b)3 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.

(f) (RESERVED) [40 CFR 264.255]

(g) Special Requirements for Ignitable or Reactive Waste [40 CFR 264.256]

Ignitable or reactive waste must not be place in a waste pile unless the waste and waste pile satisfy all applicable requirements of Rule 1200-01-11-.10, and:

1. The waste is treated, rendered, or mixed before or immediately after placement in the pile 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(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.

(h) Special Requirements for Incompatible Wastes [40 CFR 264.257]

1. Incompatible wastes, or incompatible wastes and materials, (see Appendix V in paragraph (57) 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 containers, other 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.

3. Hazardous waste must not be piled on the same base where incompatible wastes or materials were previously piled, unless the base has been decontaminated sufficiently to ensure compliance with part (2)(h)2 of this Rule.

(i) Closure and Post-closure Care [40 CFR 264.258]

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(1)(c)4 applies.

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 care requirements that apply to landfills (subparagraph (14)(k) of this Rule).

3. (i) The owner or operator of a waste pile that does not comply with the liner requirements of subpart (b)1(i) of this paragraph and is not exempt from them in accordance with parts (a)3 or (b)2 of this paragraph, must:

(I) Include in the closure plan for the pile 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 not all contaminated subsoils can be practicably removed at closure.

(ii) The cost estimates calculated under subparagraphs (8)(c) and (e) of this Rule for closure and post-closure care of a pile 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 paragraph.

(j) Special Requirements for Hazardous Wastes F020, F021, F022, F023, F026, and F027 [40 CFR 264.259]

1. Hazardous Wastes F020, F021, F022, F023, F026, and F027 must not be placed in waste piles that are not enclosed (as defined in subparagraph (a)3 of this paragraph) unless the owner or operator operates the waste pile in accordance with a management plan for these wastes that is approved by the Commissioner pursuant to the standards set out in this paragraph, and in accord with all other applicable requirements of this Rule. The factors to be considered are:

(i) The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

(ii) The attenuative properties of underlying and surrounding soils or other materials;

(iii) The mobilizing properties of other materials co-disposed with these wastes; and

(iv) The effectiveness of additional treatment, design, or monitoring techniques.

2. The Commissioner may determine that additional design, operating, and monitoring requirements are necessary for piles managing hazardous wastes F020, F021, F022, F023, F026, and F027 in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

(13) Land Treatment [40 CFR 264 Subpart M]

(a) Applicability [40 CFR 264.270]

The regulations in this subpart apply to owners and operators of facilities that treat or dispose of hazardous waste in land treatment units, except as subparagraphs (1)(b) and (1)(d) of this Rule provide otherwise.

(b) Treatment Program [40 CFR 264.271]

1. An owner or operator subject to this paragraph must establish a land treatment program that is designed to ensure that hazardous constituents placed in or on the treatment zone are degraded, transformed, or immobilized within the treatment zone. The Commissioner will specify in the facility permit the elements of the treatment program, including:

(i) The wastes that are capable of being treated at the unit based on a demonstration under subparagraph (c) of this paragraph;

(ii) Design measures and operating practices necessary to maximize the success of degradation, transformation, and immobilization processes in the treatment zone in accordance with part (d)1 of this paragraph; and

(iii) Unsaturated zone monitoring provisions meeting the requirements of subparagraph (i) of this paragraph.

2. The Commissioner will specify in the facility permit the hazardous constituents that must be degraded, transformed, or immobilized under this subpart. Hazardous constituents are constituents identified in Appendix VIII in paragraph (5) of Rule 1200-01-11-.02 that are reasonably expected to be in, or derived from, waste placed in or on the treatment zone.

3. The Commissioner will specify the vertical and horizontal dimensions of the treatment zone in the facility permit. The treatment zone is the portion of the unsaturated zone below and including the land surface in which the owner or operator intends to maintain the conditions necessary for effective degradation, transformation, or immobilization of hazardous constituents. The maximum depth of the treatment zone must be:

   (i) No more than 1.5 meters (5 feet) from the initial soil surface; and

   (ii) More than 1 meter (3 feet) above the seasonal high water table.

(c) Treatment Demonstration [40 CFR 264.272]

1. For each waste that will be applied to the treatment zone, the owner or operator must demonstrate, prior to application of the waste, that hazardous constituents in the waste can be completely degraded, transformed, or immobilized in the treatment zone.

2. In making this demonstration, the owner or operator may use field tests, laboratory analyses, available data, or, in the case of existing units, operating data. If the owner or operator intends to conduct field tests or laboratory analyses in order to make the demonstration required under part 1 of this subparagraph, he must obtain a treatment or disposal permit under Rule 1200-01-11-.07(1)(f). The Commissioner will specify in this permit the testing, analytical, design, and operating requirements (including the duration of the tests and analyses, and, in the case of field tests, the horizontal and vertical dimensions of the treatment zone, monitoring procedures, closure and clean-up activities) necessary to meet the requirements in part 3 of this subparagraph.

3. Any field test or laboratory analysis conducted in order to make a demonstration under part 1 of this subparagraph must:

   (i) Accurately simulate the characteristics and operating conditions for the proposed land treatment unit including:

      (I) The characteristics of the waste (including the presence of Appendix VIII in paragraph (5) of Rule 1200-01-11-.02);

      (II) The climate in the area;

      (III) The topography of the surrounding area;

      (IV) The characteristics of the soil in the treatment zone (including depth); and

      (V) The operating practices to be used at the unit.

   (ii) Be likely to show that hazardous constituents in the waste to be tested will be completely degraded, transformed, or immobilized in the treatment zone of the proposed land treatment unit; and

(iii) Be conducted in a manner that protects human health and the environment considering:

(I) The characteristics of the waste to be tested;

(II) The operating and monitoring measures taken during the course of the test;

(III) The duration of the test;

(IV) The volume of waste used in the test;

(V) In the case of field tests, the potential for migration of hazardous constituents to ground water or surface water.

(d) Design and Operating Requirements [40 CFR 264.273]

The Commissioner will specify in the facility permit how the owner or operator will design, construct, operate, and maintain the land treatment unit in compliance with this subparagraph.

1. The owner or operator must design, construct, operate, and maintain the unit to maximize the degradation, transformation, and immobilization of hazardous constituents in the treatment zone. The owner or operator must design, construct, operate, and maintain the unit in accord with all design and operating conditions that were used in the treatment demonstration under subparagraph (c) of this paragraph. At a minimum, the Commissioner will specify the following in the facility permit:

(i) The rate and method of waste application to the treatment zone;

(ii) Measures to control soil pH;

(iii) Measures to enhance microbial or chemical reactions (e.g., fertilization, tilling); and

(iv) Measures to control the moisture content of the treatment zone.

2. The owner or operator must design, construct, operate, and maintain the treatment zone to minimize run-off of hazardous constituents during the active life of the land treatment unit.

3. The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the treatment zone during peak discharge from at least a 25-year storm.

4. 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.

5. 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 the design capacity of the system.

6. 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.

7. The owner or operator must inspect the unit weekly and after storms to detect evidence of:

   (i) Deterioration, malfunctions, or improper operation of run-on and run-off control systems; and

   (ii) Improper functioning of wind dispersal control measures.

(e)-(f) (RESERVED) [40 CFR 264.274-264.275]

(g) Food-chain Crops [40 CFR 264.276]

The Commissioner may allow the growth of food-chain crops in or on the treatment zone only if the owner or operator satisfies the conditions of this subparagraph. The Commissioner will specify in the facility permit the specific food-chain crops which may be grown.

1. (i) The owner or operator must demonstrate that there is no substantial risk to human health caused by the growth of such crops in or on the treatment zone by demonstrating, prior to the planting of such crops, that hazardous constituents other than cadmium:

   (I) Will not be transferred to the food or feed portions 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 or on the food or feed portions of crops grown on the treatment zone than in or on identical portions of the same crops grown on untreated soils under similar conditions in the same region.

   (ii) The owner or operator must make the demonstration required under this paragraph prior to the planting of crops at the facility for all constituents identified in Appendix VIII of Rule 1200-01-11-.02(5) that are reasonably expected to be in, or derived from, waste placed in or on the treatment zone.

   (iii) In making a demonstration under this part, the owner or operator may use field tests, greenhouse studies, available data, or, in the case of existing units, operating data, and must:

   (I) Base the demonstration on conditions similar to those present in the treatment zone, including soil characteristics (e.g., pH, cation exchange capacity), specific wastes, application rates, application methods, and crops to be grown; and

   (II) Describe the procedures used in conducting any tests, including the sample selection criteria, sample size, analytical methods, and statistical procedures.

   (iv) If the owner or operator intends to conduct field tests or greenhouse studies in order to make the demonstration required under this part, he must obtain a permit for conducting such activities.

2. The owner or operator must comply with the following conditions if cadmium is contained in wastes applied to the treatment zone:

(i) (I) The pH of the waste and soil mixture must be 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 must 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 must not exceed:

Time period	Annual Cd application rate (kilograms per hectare)
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 must not exceed 5 kg/ha if the waste and soil mixture has a pH of less than 6.5; and

(IV) If the waste and soil mixture has a pH of 6.5 or greater or is maintained at a pH of 6.5 or greater during crop growth, the cumulative application of cadmium from waste must not exceed: 5 kg/ha if soil cation exchange capacity (CEC) is less than 5 meq/100g; 10 kg/ha if soil CEC is 5-15 meq/100g; and 20 kg/ha if soil CEC is greater than 15 meq/100g; or

(ii) (I) Animal feed must be the only food-chain crop produced;

(II) The pH of the waste and soil mixture must be 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 must be maintained whenever food-chain crops are grown;

(III) There must be an operating plan which demonstrates how the animal feed will be distributed to preclude ingestion by humans. The operating plan must describe the measures to be taken to safeguard against possible health hazards from cadmium entering the food chain, which may result from alternative land uses; and

(IV) Future property owners must be 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 subpart 2(ii) of this subparagraph.

(h) (RESERVED) [40 CFR 264.277]

(i) Unsaturated Zone Monitoring [40 CFR 264.278]

An owner or operator subject to this paragraph must establish an unsaturated zone monitoring program to discharge the following responsibilities:

1. The owner or operator must monitor the soil and soil-pore liquid to determine whether hazardous constituents migrate out of the treatment zone.

   (i) The Commissioner will specify the hazardous constituents to be monitored in the facility permit. The hazardous constituents to be monitored are those specified under part (b)2 of this paragraph.

   (ii) The Commissioner may require monitoring for principal hazardous constituents (PHCs) in lieu of the constituents specified under part (b)2 of this paragraph. PHCs are hazardous constituents contained in the wastes to be applied at the unit that are the most difficult to treat, considering the combined effects of degradation, transformation, and immobilization. The Commissioner will establish PHCs if he finds, based on waste analyses, treatment demonstrations, or other data, that effective degradation, transformation, or immobilization of the PHCs will assure treatment at least equivalent levels for the other hazardous constituents in the wastes.

2. The owner or operator must install an unsaturated zone monitoring system that includes soil monitoring using soil cores and soil-pore liquid monitoring using devices such as lysimeters. The unsaturated zone monitoring system must consist of a sufficient number of sampling points at appropriate locations and depths to yield samples that:

   (i) Represent the quality of background soil-pore liquid quality and the chemical make-up of soil that has not been affected by leakage from the treatment zone; and

   (ii) Indicate the quality of soil-pore liquid and the chemical make-up of the soil below the treatment zone.

3. The owner or operator must establish a background value for each hazardous constituent to be monitored under part 1 of this subparagraph. The permit will specify the background values for each constituent or specify the procedures to be used to calculate the background values.

   (i) Background soil values may be based on a one-time sampling at a background plot having characteristics similar to those of the treatment zone.

   (ii) Background soil-pore liquid values must be based on at least quarterly sampling for one year at a background plot having characteristics similar to those of the treatment zone.

   (iii) The owner or operator must express all background values in a form necessary for the determination of statistically significant increases under part 6 of this subparagraph.

(iv) In taking samples used in the determination of all background values, the owner or operator must use an unsaturated zone monitoring system that complies with subpart 2(i) of this subparagraph.

4. The owner or operator must conduct soil monitoring and soil-pore liquid monitoring immediately below the treatment zone. The Commissioner will specify the frequency and timing of soil and soil-pore liquid monitoring in the facility permit after considering the frequency, timing, and rate of waste application, and the soil permeability. The owner or operator must express the results of soil and soil-pore liquid monitoring in a form necessary for the determination of statistically significant increases under part 6 of this subparagraph.

5. The owner or operator must use consistent sampling and analysis procedures that are designed to ensure sampling results that provide a reliable indication of soil-pore liquid quality and the chemical make-up of the soil below the treatment zone. At a minimum, the owner or operator must implement procedures and techniques for:

(i) Sample collection;

(ii) Sample preservation and shipment;

(iii) Analytical procedures; and

(iv) Chain of custody control.

6. The owner or operator must determine whether there is a statistically significant change over background values for any hazardous constituent to be monitored under part 1 of this subparagraph below the treatment zone each time he conducts soil monitoring and soil-pore liquid monitoring under part 4 of this subparagraph.

(i) In determining whether a statistically significant increase has occurred, the owner or operator must compare the value of each constituent, as determined under part 4 of this subparagraph, to the background value for that constituent according to the statistical procedure specified in the facility permit under this part.

(ii) The owner or operator must determine whether there has been a statistically significant increase below the treatment zone within a reasonable time period after completion of sampling. The Commissioner will specify that time period in the facility permit after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of soil and soil-pore liquid samples.

(iii) The owner or operator must determine whether there is a statistically significant increase below the treatment zone using a statistical procedure that provides reasonable confidence that migration from the treatment zone will be identified. The Commissioner will specify a statistical procedure in the facility permit that he finds:

(I) Is appropriate for the distribution of the data used to establish background values; and

(II) Provides a reasonable balance between the probability of falsely identifying migration from the treatment zone and the probability of failing to identify real migration from the treatment zone.

7. If the owner or operator determines, pursuant to part 6 of this subparagraph, that there is a statistically significant increase of hazardous constituents below the treatment zone, he must:

(i) Notify the Commissioner of this finding in writing within seven days. The notification must indicate what constituents have shown statistically significant increases.

(ii) Within 90 days, submit to the Commissioner an application for a permit modification to modify the operating practices at the facility in order to maximize the success of degradation, transformation, or immobilization processes in the treatment zone.

8. If the owner or operator determines, pursuant to part 6 of this subparagraph, that there is a statistically significant increase of hazardous constituents below the treatment zone, he may demonstrate that a source other than regulated units caused the increase or that the increase resulted from an error in sampling, analysis, or evaluation. While the owner or operator may make a demonstration under this part in addition to, or in lieu of, submitting a permit modification application under subpart 7(ii) of this subparagraph, he is not relieved of the requirement to submit a permit modification application within the time specified in subpart 7(ii) of this subparagraph unless the demonstration made under this part successfully shows that a source other than regulated units caused the increase or that the increase resulted from an error in sampling, analysis, or evaluation. In making a demonstration under this part, the owner or operator must:

(i) Notify the Commissioner in writing within seven days of determining a statistically significant increase below the treatment zone that he intends to make a determination under this part;

(ii) Within 90 days, submit a report to the Commissioner demonstrating that a source other than the regulated units caused the increase or that the increase resulted from error in sampling, analysis, or evaluation;

(iii) Within 90 days, submit to the Commissioner an application for a permit modification to make any appropriate changes to the unsaturated zone monitoring program at the facility; and

(iv) Continue to monitor in accordance with the unsaturated zone monitoring program established under this section.

(j) Recordkeeping [40 CFR 264.279]

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 Care [40 CFR 264.280]

1. During the closure period the owner or operator must:

(i) Continue all operations (including pH control) necessary to maximize degradation, transformation, or immobilization of hazardous constituents within the treatment zone as required under part (d)1 of this paragraph, except to the extent such measures are inconsistent with subpart (viii) of this part;.

(ii) Continue all operations in the treatment zone to minimize run-off of hazardous constituents as required under part (d)2 of this paragraph;

(iii) Maintain the run-on control system required under part (d)3 of this paragraph;

(iv) Maintain the run-off management system required under part (d)4 of this paragraph;

(v) Control wind dispersal of hazardous waste if required under part (d)6 of this paragraph;

(vi) Continue to comply with any prohibitions or conditions concerning growth of food-chain crops under subparagraph (g) of this paragraph;

(vii) Continue unsaturated zone monitoring in compliance with subparagraph (i) of this paragraph, except that soil-pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone; and

(viii) Establish a vegetative cover on the portion of the facility being closed at such time that the cover will not substantially impede degradation, transformation, or immobilization of hazardous constituents in the treatment zone. The vegetative cover must be capable of maintaining growth without extensive maintenance.

2. 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 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.

3. During the post-closure care period the owner or operator must:

(i) Continue all operations (including pH control) necessary to enhance degradation and transformation and sustain immobilization of hazardous constituents in the treatment zone to the extent that such measures are consistent with other post-closure care activities;

(ii) Maintain a vegetative cover over closed portions of the facility;

(iii) Maintain the run-on control system required under part (d)3 of this paragraph;

(iv) Maintain the run-off management system required under part (d)4 of this paragraph;

(v) Control wind dispersal of hazardous waste if required under part (d)6 of this paragraph;

(vi) Continue to comply with any prohibitions or conditions concerning growth of food-chain crops under subparagraph (g) of this paragraph; and

(vii) Continue unsaturated zone monitoring in compliance with subparagraph (i) of this paragraph, except that soil-pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone.

4. The owner or operator is not subject to regulation under subpart 1(viii) and part 3 of this subparagraph, if the Commissioner finds that the level of hazardous constituents in the treatment zone soil does not exceed the background value of those constituents by an amount that is statistically significant when using the test specified in subpart (iii) of this part. The owner or operator may submit such a demonstration to the Commissioner at any time during the closure or post-closure care periods. For the purposes of this part:

(i) The owner or operator must establish background soil values and determine whether there is a statistically significant increase over those values for all hazardous constituents specified in the facility permit under part (b)2 of this paragraph.

(I) Background soil values may be based on a one-time sampling of a background plot having characteristics similar to those of the treatment zone.

(II) The owner or operator must express background values and values for hazardous constituents in the treatment zone in a form necessary for the determination of statistically significant increases under subpart (iii) of this part.

(ii) In taking samples used in the determination of background and treatment zone values, the owner or operator must take samples at a sufficient number of sampling points and at appropriate locations and depths to yield samples that represent the chemical make-up of soil that has not been affected by leakage from the treatment zone and the soil within the treatment zone, respectively.

(iii) In determining whether a statistically significant increase has occurred, the owner or operator must compare the value of each constituent in the treatment zone to the background value for that constituent using a statistical procedure that provides reasonable confidence that constituent presence in the treatment zone will be identified. The owner or operator must use a statistical procedure that:

(I) Is appropriate for the distribution of the data used to establish background values; and

(II) Provides a reasonable balance between the probability of falsely identifying hazardous constituent presence in the treatment zone and the probability of failing to identify real presence in the treatment zone.

5. The owner or operator is not subject to regulation under paragraph (6) of this Rule if the Commissioner finds that the owner or operator satisfies part 4 of this subparagraph and if unsaturated zone monitoring under subparagraph (i) of this

paragraph indicates that hazardous constituents have not migrated beyond the treatment zone during the active life of the land treatment unit.

(l) Special Requirements for Ignitable or Reactive Waste [40 CFR 264.281]

The owner or operator must not apply ignitable or reactive waste to the treatment zone unless the waste and the treatment zone meet all applicable requirements of Rule 1200-01-11-.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(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 264.282]

The owner or operator must not place incompatible wastes, or incompatible wastes and materials (see Appendix V in paragraph (57) of this Rule for examples), in or on the same treatment zone, unless part (2)(h)2 of this Rule is complied with.

(n) Special Requirements for Hazardous Wastes F020, F021, F022, F023, F026, and F027 [40 CFR 264.283]

1. Hazardous Wastes F020, F021, F022, F023, F026 and F027 must not be placed in a land treatment unit unless the owner or operator operates the facility in accordance with a management plan for these wastes that is approved by the Commissioner pursuant to the standards set out in this paragraph, and in accord with all other applicable requirements of this part. The factors to be considered are:

   (i) The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

   (ii) The attenuative properties of underlying and surrounding soils or other materials;

   (iii) The mobilizing properties of other materials co-disposed with these wastes; and

   (iv) The effectiveness of additional treatment, design, or monitoring techniques.

2. The Commissioner may determine that additional design, operating, and monitoring requirements are necessary for land treatment facilities managing hazardous wastes F020, F021, F022, F023, F026, and F027 in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

(14) Landfills [40 CFR 264 Subpart N]

(a) Applicability [40 CFR 264.300]

The regulations in this paragraph apply to owners and operators of facilities that dispose of hazardous waste in landfills, except as subparagraphs (1)(b) and (1)(d) of this Rule provide otherwise.

(b) Design and Operating Requirements [40 CFR 264.301]

1. Any landfill that is not covered by part 3 of this subparagraph or Rule 1200-01-11-.05(14)(b)1 must have a liner system for all portions of the landfill (except for existing portions of such landfill). The liner system must have:

(i) A liner that is designed, constructed, and installed to prevent any migration of wastes out of the landfill to the adjacent subsurface soil or ground water or surface water at anytime during the active life (including the closure period) of the landfill. The liner must be constructed of materials that prevent wastes from passing into the liner 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 leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

(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 likely to be in contact with the waste or leachate; and

(ii) A leachate collection and removal system immediately above the liner that is designed, constructed, maintained, and operated to collect and remove leachate from the landfill. The Commissioner will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system must be:

(I) Constructed of materials that are:

I. Chemically resistant to the waste managed in the landfill and the leachate expected to be generated; and

II. Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the landfill; and

(II) Designed and operated to function without clogging through the scheduled closure of the landfill.

2. The owner or operator will be exempted from the requirements of part 1 of this subparagraph if the Commissioner finds, based on a demonstration by the owner or operator, that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents (see subparagraph (6)(d) of this Rule) into the ground water or surface water at any future time. In deciding whether to grant an exemption, the Commissioner will consider:

   (i) The nature and quantity of the wastes;

   (ii) The proposed alternate design and operation;

   (iii) The hydrogeologic setting of the facility, including the attenuative capacity and thickness of the liners and soils present between the landfill and ground water or surface water; and

   (iv) All other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to ground water or surface water.

3. The owner or operator of each new landfill unit on which construction commences after January 29, 1992, each lateral expansion of a landfill unit on which construction commences after July 29, 1992, and each replacement of an existing landfill 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. "Construction commences" is as defined in Rule 1200-01-11-.01(2)(a) under "existing facility".

   (i) (I) The liner system must include:

      I. A top liner designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into such liner during the active life and post-closure care period; and

      II. A composite bottom liner, consisting of at least two components. The upper component must be designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and post-closure care period. The lower component must be designed and constructed of materials to minimize the migration of hazardous constituents if a breach in the upper component were to occur. The lower component must be constructed of at least 3 feet (91 cm) of compacted soil material with a hydraulic conductivity of no more than 1×10^{-7} cm/sec.

   (II) The liners must comply with items 1(i)(I), (II) and (III) of this subparagraph.

   (ii) The leachate collection and removal system immediately above the top liner must be designed, constructed, operated, and maintained to collect and remove leachate from the landfill during the active life and post-closure care period. The Commissioner will specify design and operating conditions in the permit to ensure that the leachate depth over the liner

does not exceed 30 cm (one foot). The leachate collection and removal system must comply with items (iii)(III) and (IV) of this part.

(iii) The leachate collection and removal system between the liners, and immediately above the bottom composite liner in the case of multiple leachate collection and removal systems, is also a leak detection system. This leak detection system must be capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and post-closure care period. The requirements for a leak detection system in this paragraph are satisfied by installation of a system that is, at a minimum:

(I) Constructed with a bottom slope of one percent or more;

(II) Constructed of granular drainage materials 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;

(III) Constructed of materials that are chemically resistant to the waste managed in the landfill and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and equipment used at the landfill;

(IV) Designed and operated to minimize clogging during the active life and post-closure care period; and

(V) Constructed with sumps and liquid removal methods (e.g., pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit must have its own sump(s). The design of each sump and removal system must provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed.

(iv) The owner or operator shall collect and remove pumpable liquids in the leak detection system sumps to minimize the head on the bottom liner.

(v) The owner or operator of a leak detection system that is not located completely above the seasonal high water table must demonstrate that the operation of the leak detection system will not be adversely affected by the presence of ground water.

4. The Commissioner may approve alternative design or operating practices to those specified in part 3 of this subparagraph if the owner or operator demonstrates to the Commissioner that such design and operating practices, together with location characteristics:

(i) Will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as the liners and leachate collection and removal systems specified in part 3 of this subparagraph; and

(ii) Will allow detection of leaks of hazardous constituents through the top liner at least as effectively.

5. The double liner requirement set forth in part 3 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(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;

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(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.

6. The owner or operator of any replacement landfill unit is exempt from part 3 of this subparagraph if:

(i) The existing unit was constructed in compliance with the design standards of paragraph (11) of this Rule; and

(ii) There is no reason to believe that the liner is not functioning as designed.

7. 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.

8. 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.

9. 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.

10. If the landfill contains any particulate matter which may be subject to wind dispersal, the owner or operator must cover or otherwise manage the landfill to control wind dispersal.

11. The Commissioner will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this subparagraph are satisfied.

12. The owner or operator must not accept a hazardous waste from a particular generating facility for landfilling unless and until such action has been specifically authorized either in the permit (as, for example, for an on-site facility permitted to handle a specific waste stream) or in a written approval granted by the Commissioner (in accordance with subparts (i) and (ii) of this part) pursuant to a case-by-case request from the owner or operator.

    (i) Such case-by-case requests must be submitted to the Commissioner in duplicate, and must include the waste analysis information the owner or operator has obtained under subparagraph (2)(d) of this Rule and any other information the Commissioner might reasonably require. Such a request shall not be considered by the Commissioner unless the subject hazardous waste falls within the scope of those hazardous wastes which the landfill is allowed to handle under the facility permit.

    (ii) The Commissioner shall not approve the landfilling of a hazardous waste if he or she finds that:

        (I) The waste, because of its high toxicity, tendency to leach or migrate, or other characteristic, represents an unusually high danger to public health or the environment; and

        (II) An alternative to land disposal which is both technologically and economically feasible exists.

(c) Action Leakage Rate [40 CFR 264.302]

1. The Commissioner shall approve an action leakage rate for landfill units subject to parts (b)3 or 4 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 l 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.).

2. 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 (d)3 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 (d)3 of this paragraph.

(d) Monitoring and Inspection [40 CFR 264.303]

1. During construction or installation, liners (except in the case of existing portions of landfills exempt from part (b)1 of this paragraph) 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:

(i) Synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters; and

(ii) Soil-based and admixed liners and covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the liner or cover.

2. While a landfill 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) Proper functioning of wind dispersal control systems, where present; and

(iii) The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

3. (i) An owner or operator required to have a leak detection system under parts (b)3 or 4 of this subparagraph 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.

(e) Response Actions [40 CFR 264.304]

1. The owner or operator of landfill units subject to parts (b)3 or 4 of this paragraph must have an approved response action plan before receipt of waste. 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 (e)2(iii),(iv) and (v) of this paragraph, 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 (e)2(iii), (iv), and (v) of this paragraph, 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.

(f)-(i) (RESERVED) [40 CFR 264.305 - 264.308]

(j) Surveying and Recordkeeping [40 CFR 264.309]

The owner or operator of a landfill must maintain the following items in the operating record required under 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 264.310]

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)-(k) of this Rule, including maintenance and monitoring throughout the post-closure care period (specified in the permit under subparagraph (7)(h) of this Rule). The owner or operator must:

   (i) Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events;

   (ii) Continue to operate the leachate collection and removal system until leachate is no longer detected;

   (iii) Maintain and monitor the leak detection system in accordance with item (b)3(iii)(IV) and subpart (b)3(iv) and part (d)3 of this paragraph, and comply with all other applicable leak detection system requirements of this Rule;

   (iv) Maintain and monitor the ground-water monitoring system and comply with all other applicable requirements of paragraph (6) of this Rule;

   (v) Prevent run-on and run-off from eroding or otherwise damaging the final cover; and

   (vi) Protect and maintain surveyed benchmarks used in complying with subparagraph (j) of this paragraph.

(l) (RESERVED) [40 CFR 264.311]

(m) Special Requirements for Ignitable or Reactive Waste [40 CFR 264.312]

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 meet all applicable requirements of Rule 1200-01-11-.10, and:

   (i) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under subparagraph (3)(b) and (d) of Rule 1200-01-11-.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 Rule 1200-01-11-.10(3), 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. 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 of the wastes; must be covered daily with soil or other non-combustible material to minimize the potential for ignition 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 264.313]

Incompatible wastes, or incompatible wastes and materials, (see Appendix V of paragraph (57) 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 264.314]

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: Implementation of this provision between May 8, 1985 and February 2, 1986 remains with EPA.)

2. 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 Waste, Physical/Chemical Methods" (see 40 CFR 260.11; Rule 1200-01-11-.01(2)(b)1).

3. 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) has 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.

4. Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable. Nonbiodegradable sorbents are: materials listed or described in subpart 1 of this part; materials that pass one of the tests in subpart 2 of this

part; or materials that are determined to be nonbiodegradable through the Rule 1200-01-11-.01 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 (see 40 CFR 260.11; Rule 1200-01-11-.01(2)(b) 1); 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: [CO2 Evolution (Modified Sturm Test)].

5. 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(2)(a)).

(p) Special Requirements for Containers [40 CFR 264.315]

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 264.316]

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 contained waste. 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 Rule 1200-01-11-.06(14)(o)5, 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(2)(a), must not be placed in the same outside container.

5. Reactive wastes, other than cyanide- or sulfide-bearing waste as defined in Rule 1200-01-11-.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 packed 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. Persons who incinerate lab packs according to the requirements in Rule 1200-01-11-.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.

(r) Special Requirements for Hazardous Wastes F020, F021, F022, F023, F026, and F027 [40 CFR 264.317]

1. Hazardous Wastes F020, F021, F022, F023, F026, and F027 must not be placed in a landfill unless the owner or operator operates the landfill in accordance with a management plan for these wastes that is approved by the Commissioner pursuant to the standards set out in this subparagraph, and in accord with all other applicable requirements of this Rule. The factors to be considered are:

(i) The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through the soil or to volatilize or escape into the atmosphere;

(ii) The attenuative properties of underlying and surrounding soils or other materials;

(iii) The mobilizing properties of other materials co-disposed with these wastes; and

(iv) The effectiveness of additional treatment, design, or monitoring requirements.

2. The Commissioner may determine that additional design, operating, and monitoring requirements are necessary for landfills managing hazardous wastes F020, F021, F022, F023, F026, and F027 in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

(15) Incinerators [40 CFR 264 Subpart O]

(a) Applicability [40 CFR 264.340]

1. The regulations of this paragraph apply to owners and operators of hazardous waste incinerators (as defined in Rule 1200-01-11-.01(2)(a)), except as subparagraph (1)(b) of this Rule provides otherwise.

2. Integration of the MACT standards

(i) Except as provided by subparts 2(ii)through 2 (v) of this subparagraph, the standards of this Rule do not apply to a new hazardous waste incineration unit that becomes subject to RCRA permit requirements after October 12, 2005; or no longer apply when an owner or operator of an existing hazardous waste incineration unit 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 63.1210(d) documenting compliance with the requirements of 40 CFR 63 Subpart EEE. Nevertheless, even after this demonstration of compliance with the MACT standards, Hazardous Waste permit conditions that were based on the standards of this Rule will continue to be in effect until they are removed from the permit or the permit is terminated or revoked, unless the permit expressly provides otherwise.

(ii) The MACT standards do not replace the closure requirements of subparagraph (15)(1) or the applicable requirements of paragraphs (1) through (8), (31), and (32) of this Rule.

(iii) The particulate matter standard of part (d)3 of this paragraph remains in effect for incinerators that elect to comply with the alternative to the particulate matter standard of §63.1206(b)(14).

(iv) The following requirements remain in effect for startup, shutdown, and malfunction events if you elect to comply with item (12)(a)1(i)(I) of Rule

1200-01-11-.07 to minimize emissions of toxic compounds from these events:

(I) Part (15)(f)1 of this Rule requiring that an incinerator operate in accordance with operating requirements specified in the permit; and

(II) Part (15)(f)3 of this Rule requiring compliance with the emission standards and operating requirements during startup and shutdown if hazardous waste is in the combustion chamber, except for particular hazardous wastes.

(v) The particulate matter standard of part (d)3 of this paragraph remains in effect for incinerators that elect to comply with the alternative to the particulate matter standard of 40 CFR 63.1206(b)(14) and 63.1219(e).

3. After consideration of the waste analysis included with Part B of the permit application, the Commissioner, in establishing the permit conditions, must exempt the applicant from all requirements of this paragraph except subparagraph (b) of this paragraph (Waste analysis) and subparagraph (l) of this paragraph (Closure),

(i) If the Commissioner finds that the waste to be burned is:

(I) Listed as a hazardous waste in Rule 1200-01-11-.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(4) solely because it is reactive (Hazard Code R) for characteristics other than those listed in Rule 1200-01-11-.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 test for characteristics of hazardous wastes under Rule 1200-01-11-.02(3); or

(IV) A hazardous waste solely because it possesses any of the reactivity characteristics described by Rule 1200-01-11-.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; and

(ii) If the waste analysis shows that the waste contains none of the hazardous constituents listed in Appendix VIII of Rule 1200-01-11-.02, which would reasonably be expected to be in the waste.

4. If the waste to be burned is one which is described by items 3(i)(I) through (IV) of this subparagraph and contains insignificant concentrations of the hazardous constituents listed in Appendix VIII of Rule 1200-01-11-.02, then the Commissioner may, in establishing permit conditions, exempt the applicant from all requirements of this paragraph, except subparagraph (b) of this paragraph (Waste analysis) and subparagraph (l) of this paragraph (Closure), after consideration of the waste analysis included with Part B of the permit application,

unless the Commissioner finds that the waste will pose a threat to human health and the environment when burned in an incinerator.

5. The owner or operator of an incinerator may conduct trial burns subject only to the requirements of Rule 1200-01-11-.07(1)(e) (Short term and incinerator permits).

(b) Waste Analysis [40 CFR 264.341]

1. As a portion of the trial burn plan required by Rule 1200-01-11-.07(1)(e), or with Part B of the permit application, the owner or operator must have included an analysis of the waste feed sufficient to provide all information required by part (1)(e)2 or part (5)(b)5 of Rule 1200-01-11-.07. Owners or operators of new hazardous waste incinerators must provide the information required by part (1)(e)3 or (5)(b)5 of Rule 1200-01-11-.07 to the greatest extent possible.

2. Throughout normal operation the owner or operator must conduct sufficient waste analysis to verify that waste feed to the incinerator is within the physical and chemical composition limits specified in his permit (under part (f)2 of this paragraph).

(c) Principal Organic Hazardous Constituents (POHCs) [40 CFR 264.342]

1. Principal Organic Hazardous Constituents (POHCs) in the waste feed must be treated to the extent required by the performance standard of subparagraph (d) of this paragraph.

2. (i) One or more POHCs will be specified in the facility's permit, from among those constituents listed in Appendix VIII of Rule 1200-01-11-.02, for each waste feed to be burned. This specification will be based on the degree of difficulty of incineration of the organic constituents in the waste and on their concentration or mass in the waste feed, considering the results of waste analyses and trial burns or alternative data submitted with Part B of the facility's permit application. Organic constituents which represent the greatest degree of difficulty of incineration will be those most likely to be designated as POHCs. Constituents are more likely to be designated as POHCs if they are present in large quantities or concentrations in the waste.

(ii) Trial POHCs will be designated for performance of trial burns in accordance with the procedure specified in Rule 1200-01-11-.07(1)(e) for obtaining trial burn permits.

(d) Performance Standards [40 CFR 264.343]

An incinerator burning hazardous waste must be designed, constructed, and maintained so that, when operated in accordance with operating requirements specified under subparagraph (f) of this paragraph, it will meet the following performance standards:

1. (i) Except as provided in subpart (ii) of this part, an incinerator burning hazardous waste must achieve a destruction and removal efficiency (DRE) of 99.99% for each principal organic hazardous constituent (POHC) designated (under subparagraph (c) of this paragraph) in its permit for each waste feed. DRE is determined for each POHC from the following equation:

$$DRE = \frac{W_{in} - W_{out}}{W_{in}} \times 100\%$$

where:

W_{in} = mass feed rate of one principal organic hazardous constituent (POHC) in the waste stream feeding the incinerator

and

W_{out} = mass emission rate of the same POHC present in exhaust emissions prior to release to the atmosphere.

(ii) An incinerator burning hazardous wastes F020, F021, F022, F023, F026, or F027 must achieve a destruction and removal efficiency (DRE) of 99.9999% for each principal organic hazardous constituent (POHC) designated (under subparagraph (c) of this paragraph) in its permit. This performance must be demonstrated on POHCs that are more difficult to incinerate than tetra-, penta-, and hexachlorodibenzo-p-dioxins and dibenzofurans. DRE is determined for each POHC from the equation in subpart (i) of this part.

2. An incinerator burning hazardous waste and producing stack emissions of more than 1.8 kilograms per hour (4 pounds per hour) of hydrogen chloride (HCl) must control HCl emissions such that the rate of emission is no greater than the larger of either 1.8 kilograms per hour or 1% of the HCl in the stack gas prior to entering any pollution control equipment.

3. An incinerator burning hazardous waste must not emit particulate matter in excess of 180 milligrams per dry standard cubic meter (0.08 grains per dry standard cubic foot) when corrected for the amount of oxygen in the stack gas according to the formula:

$$P_c = P_m \times \frac{14}{21 - Y}$$

Where P_c is the corrected concentration of particulate matter, P_m is the measured concentration of particulate matter, and Y is the measured concentration of oxygen in the stack gas, using the Orsat method for oxygen analysis of dry flue gas, presented in 40 CFR 60, Appendix A (Method 3). This correction procedure is to be used by all hazardous waste incinerators except those operating under conditions of oxygen enrichment. For these facilities, the Commissioner will select an appropriate correction procedure, to be specified in the facility permit.

4. For purposes of permit enforcement, compliance with the operating requirements specified in the permit (under subparagraph (f) of this paragraph) will be regarded as compliance with this section. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the performance requirements of this section may be "information" justifying modification, revocation, or reissuance of a permit under Rule 1200-01-11-.07(9)(c).

(e) Hazardous Waste Incinerator Permits [40 CFR 264.344]

1. The owner or operator of a hazardous waste incinerator may burn only wastes specified in his permit and only under operating conditions specified for those wastes under subparagraph (f) of this paragraph, except:

   (i) In approved trial burns under Rule 1200-01-11-.07(1)(e); or

   (ii) Under exemptions created by subparagraph (a) of this paragraph.

2. Other hazardous wastes may be burned only after operating conditions have been specified in a new permit or a permit modification as applicable. Operating requirements for new wastes may be based on either trial burn results or alternative data included with Part B of a permit application under Rule 1200-01-11-.07(5)(b)5.

3. The permit for a new hazardous waste incinerator must establish appropriate conditions for each of the applicable requirements of this subpart, including but not limited to allowable waste feeds and operating conditions necessary to meet the requirements of subparagraph (f) of this paragraph, sufficient to comply with the following standards:

   (i) For the period beginning with initial introduction of hazardous waste to the incinerator and ending with initiation of the trial burn, and only for the minimum time required to establish operating conditions required in subpart (ii) of this part, not to exceed a duration of 720 hours operating time for treatment of hazardous waste, the operating requirements must be those most likely to ensure compliance with the performance standards of subparagraph (d) of this paragraph, based on the Commissioner's engineering judgment. The Commissioner may extend the duration of this period once for up to 720 additional hours when good cause for the extension is demonstrated by the applicant.

   (ii) For the duration of the trial burn, the operating requirements must be sufficient to demonstrate compliance with the performance standards of subparagraph (d) of this paragraph and must be in accordance with the approved trial burn plan;

   (iii) For the period immediately following completion of the trial burn, and only for the minimum period sufficient to allow sample analysis, data computation, and submission of the trial burn results by the applicant, and review of the trial burn results and modification of the facility permit by the Commissioner, the operating requirements must be those most likely to ensure compliance with the performance standards of subparagraph (d) of this paragraph, based on the Commissioner's engineering judgement.

   (iv) For the remaining duration of the permit, the operating requirements must be those demonstrated, in a trial burn or by alternative data specified in Rule 1200-01-11-.07(5)(b)5(iii), as sufficient to ensure compliance with the performance standards of subparagraph (d) of this paragraph.

(f) Operating Requirements [40 CFR 264.345]

1. An incinerator must be operated in accordance with operating requirements specified in the permit. These will be specified on a case-by-case basis as those demonstrated (in a trial burn or in alternative data as specified in part (e)2 of this

paragraph and included with Part B of a facility's permit application) to be sufficient to comply with the performance standards of subparagraph (d) of this paragraph.

2. Each set of operating requirements will specify the composition of the waste feed (including acceptable variations in the physical or chemical properties of the waste feed which will not affect compliance with the performance requirement of subparagraph (d) of this paragraph) to which the operating requirements apply. For each such waste feed, the permit will specify acceptable operating limits including the following conditions:

   (i) Carbon monoxide (CO) level in the stack exhaust gas;

   (ii) Waste feed rate;

   (iii) Combustion temperature;

   (iv) An appropriate indicator of combustion gas velocity;

   (v) Allowable variations in incinerator system design or operating procedures; and

   (vi) Such other operating requirements as are necessary to ensure that the performance standards of subparagraph (d) of this paragraph are met.

3. During start-up and shut-down of an incinerator, hazardous waste (except wastes exempted in accordance with subparagraph (a) of this paragraph) must not be fed into the incinerator unless the incinerator is operating within the conditions of operation (temperature, air feed rate, etc.) specified in the permit.

4. Fugitive emissions from the combustion zone must be controlled by:

   (i) Keeping the combustion zone totally sealed against fugitive emissions; or

   (ii) Maintaining a combustion zone pressure lower than atmospheric pressure; or

   (iii) An alternate means of control demonstrated (with part B of the permit application) to provide fugitive emissions control equivalent to maintenance of combustion zone pressure lower than atmospheric pressure.

5. An incinerator must be operated with a functioning system to automatically cut off waste feed to the incinerator when operating conditions deviate from limits established under part 1 of this subparagraph.

6. An incinerator must cease operation when changes in waste feed, incinerator design, or operating conditions exceed limits designated in its permit.

(g) (RESERVED) [40 CFR 264.346]

(h) Monitoring and Inspections [40 CFR 264.347]

1. The owner or operator must conduct, as a minimum, the following monitoring while incinerating hazardous waste:

(i) Combustion temperature, waste feed rate, and the indicator of combustion gas velocity specified in the facility permit must be monitored on a continuous basis.

(ii) CO must be monitored on a continuous basis at a point in the incinerator downstream of the combustion zone and prior to release to the atmosphere.

(iii) Upon request by the Commissioner, sampling and analysis of the waste and exhaust emissions must be conducted to verify that the operating requirements established in the permit achieve the performance standards of subparagraph (d) of this paragraph.

2. The incinerator and associated equipment (pumps, valves, conveyors, pipes, etc.) must be subjected to thorough visual inspection, at least daily, for leaks, spills, fugitive emissions, and signs of tampering.

3. The emergency waste feed cutoff system and associated alarms must be tested at least weekly to verify operability, unless the applicant demonstrates to the Commissioner that weekly inspections will unduly restrict or upset operations and that less frequent inspection will be adequate. At a minimum, operational testing must be conducted at least monthly.

4. This monitoring and inspection data must be recorded and the records must be placed in the operating record required by subparagraph (5)(d) of this Rule and maintained in the operating record for five years, or as required by a permit issued after the effective date of this Rulemaking, but no less than five (5) years.

(i)-(k) (RESERVED) [40 CFR 264.348-264.350]

(l) Closure [40 CFR 264.351]

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 site.

(Comment: At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with Rule 1200-01-11-.02(1)(c)4, that the residue removed from the incinerator is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with applicable requirements of Rules 1200-01-11-.03 through .07 and .09.)

(16) Thermal Treatment

The regulations of Rule 1200-01-11-.05(16)(d), (f), (h), (l), and (m) apply to owners and operators of facilities that thermally treat hazardous waste in devices other than incinerators, except as subparagraph (1)(b) of this Rule provides otherwise. Thermal treatment in incinerators is subject to the requirements of paragraph (15) of this Rule.

(17) Chemical, Physical, and Biological Treatment

The regulations of Rule 1200-01-11-.05(17)(b), (c), (d), (e), (f), and (g) apply to owners and operators of facilities which treat hazardous waste by chemical, physical, or biological methods in other than tanks, surface impoundments, and land treatment facilities, except as subparagraph (1)(b) 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.

(18) Underground Injection

Except as subparagraph (1)(b) of this Rule provides otherwise:

(a) 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) - (21) (RESERVED) [40 CFR 264 Subparts P-R]

(22) Special Provisions for Cleanup [40 CFR 264 Subpart S]

(a) Applicability of Corrective Action Management Unit (CAMU) Regulations [40 CFR 264.550]

1. Except as provided in part 2 of this subparagraph, CAMUs are subject to the requirements of subparagraph (22)(c) of this Rule.

2. CAMUs that were approved before April 22, 2002, or for which substantially complete applications (or equivalents) were submitted to the Department on or before November 20, 2000, are subject to the requirements in subparagraph (22)(b) of this Rule for grandfathered CAMUs; CAMU waste, activities, and design will not be subject to the standards in subparagraph (22)(c) of this Rule, so long as the waste, activities, and design remain within the general scope of the CAMU as approved.

(b) Grandfathered Corrective Action Management Units (CAMUs) [40 CFR 264.551]

1. To implement remedies under subparagraph (6)(l) of this Rule, or to implement remedies at a permitted facility that is not subject to subparagraph (6)(l) of this Rule, the Commissioner may designate an area at the facility as a corrective action management unit under the requirements in this subparagraph. Corrective action management unit means an area within a facility that is used only for managing remediation wastes for implementing corrective action or cleanup at the facility. A CAMU must be located within the contiguous property under the control of the owner or operator where the wastes to be managed in the CAMU originated. One or more CAMUs may be designated at a facility.

(i) Placement of remediation wastes into or within a CAMU does not constitute land disposal of hazardous wastes.

(ii) Consolidation or placement of remediation wastes into or within a CAMU does
not constitute creation of a unit subject to minimum technology requirements.

2. (i) The Commissioner may designate a regulated unit (as defined in subpart (6)(a)1(ii) of this Rule) as a CAMU, or may incorporate a regulated unit into a CAMU, if:

(I) The regulated unit is closed or closing, meaning it has begun the closure
process under Rules 1200-01-11-.05(7)(d) or .06(7)(d), and

(II) Inclusion of the regulated unit will enhance implementation of effective, protective and reliable remedial actions for the facility.

(ii) The paragraphs (6), (7), and (8) requirements and the unit-specific requirements of Rules 1200-01-11-.05 or .06 that applied to that regulated unit will continue to apply to that portion of the CAMU after incorporation into the CAMU.

3. The Commissioner shall designate a CAMU in accordance with the following:

(i) The CAMU shall facilitate the implementation of reliable, effective, protective, and cost-effective remedies;

(ii) Waste management activities associated with the CAMU shall not create unacceptable risks to humans or to the environment resulting from exposure to hazardous wastes or hazardous constituents;

(iii) The CAMU shall include uncontaminated areas of the facility, only if including such areas for the purpose of managing remediation waste is more protective than management of such wastes at contaminated areas of the facility;

(iv) Areas within the CAMU, where wastes remain in place after closure of the CAMU, shall be managed and contained so as to minimize future releases, to the extent practicable;

(v) The CAMU shall enable the use, when appropriate, of treatment technologies (including innovative technologies) to enhance the long-term effectiveness of remedial actions by reducing the toxicity, mobility, or volume of wastes that will remain in place after closure of the CAMU; and

(vi) The CAMU shall, to the extent practicable, minimize the land area of the facility upon which wastes will remain in place after closure of the CAMU.

4. The owner/operator shall provide sufficient information to enable the Commissioner to designate a CAMU in accordance with the criteria in this subparagraph.

5. The Commissioner shall specify, in the permit or order, requirements for CAMUs to include the following:

(i) The areal configuration of the CAMU.

(ii) Requirements for remediation waste management to include the specification of applicable design, operation and closure requirements.

(iii) Requirements for ground water monitoring that are sufficient to:

(I) Continue to detect and to characterize the nature, extent, concentration, direction, and movement of existing releases of

hazardous constituents in ground water from sources located within the CAMU; and

(II) Detect and subsequently characterize releases of hazardous constituents to ground water that may occur from areas of the CAMU in which wastes will remain in place after closure of the CAMU.

(iv) Closure and post-closure requirements.

(I) Closure of corrective action management units shall:

I. Minimize the need for further maintenance; and

II. Control, minimize, or eliminate, to the extent necessary to protect human health and the environment, for areas where wastes remain in place, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, to surface waters, or to the atmosphere.

(II) Requirements for closure of CAMUs shall include the following, as appropriate and as deemed necessary by the Commissioner for a given CAMU:

I. Requirements for excavation, removal, treatment or containment of wastes;

II. For areas in which wastes will remain after closure of the CAMU, requirements for capping of such areas; and

III. Requirements for removal and decontamination of equipment, devices, and structures used in remediation waste management activities within the CAMU.

(III) In establishing specific closure requirements for CAMUs under part 5 of this subparagraph, the Commissioner shall consider the following factors:

I. CAMU characteristics;

II. Volume of wastes which remain in place after closure;

III. Potential for releases from the CAMU;

IV. Physical and chemical characteristics of the waste;

V. Hydrological and other relevant environmental conditions at the facility which may influence the migration of any potential or actual release; and

VI. Potential for exposure of humans and environmental receptors if releases were to occur from the CAMU.

(IV) Post-closure requirements as necessary to protect human health and the environment, to include, for areas where wastes will remain in place, monitoring and maintenance activities, and the frequency with which such activities shall be performed to ensure the integrity of any cap, final cover, or other containment system.

6. The Commissioner shall document the rationale for designating CAMUs and shall make such documentation available to the public.

7. Incorporation of a CAMU into an existing permit must be approved by the Commissioner according to the procedures for Agency-initiated permit modifications under Rule 1200-01-11-.07(9)(c)2, or according to the permit modification procedures of Rule 1200-01-11-.07(9)(c)5.

8. The designation of a CAMU does not change the Department's existing authority to address clean-up levels, media-specific points of compliance to be applied to remediation at a facility, or other remedy selection decisions.

(c) Corrective Action Management Units (CAMU) [40 CFR 264.552]

1. To implement remedies under subparagraph (6)(l) of this Rule or to implement remedies at a permitted facility that is not subject to subparagraph (6)(l) of this Rule, the Commissioner may designate an area at the facility as a corrective action management unit under the requirements in this subparagraph. Corrective action management unit means an area within a facility that is used only for managing CAMU-eligible wastes for implementing corrective action or cleanup at the facility. A CAMU must be located within the contiguous property under the control of the owner or operator where the wastes to be managed in the CAMU originated. One or more CAMUs may be designated at a facility.

(i) CAMU-eligible waste means:

(I) All solid and hazardous wastes, and all media (including ground water, surface water, soils, and sediments) and debris, that are managed for implementing cleanup. As-generated wastes (either hazardous or non-hazardous) from ongoing industrial operations at a site are not CAMU-eligible wastes.

(II) Wastes that would otherwise meet the description in item (I) of this subpart are not "CAMU-Eligible Wastes" where:

I. The wastes are hazardous wastes found during cleanup in intact or substantially intact containers, tanks, or other non-land-based units found above ground, unless the wastes are first placed in the tanks, containers or non-land-based units as part of cleanup, or the containers or tanks are excavated during the course of cleanup; or

II. The Commissioner exercises the discretion in subpart (ii) of this part to prohibit the wastes from management in a CAMU.

(III) Notwithstanding item (I) of this subpart, where appropriate, as-generated non-hazardous waste may be placed in a CAMU

where such waste is being used to facilitate treatment or the performance of the CAMU.

(ii) The Commissioner may prohibit, where appropriate, the placement of waste in a CAMU where the Commissioner has or receives information that such wastes have not been managed in compliance with applicable land disposal treatment standards of Rule 1200-01-11-.10, or applicable unit design requirements of this Rule, or applicable unit design requirements of Rule 1200-01-11-.05, or that non-compliance with other applicable requirements of these Rules likely contributed to the release of the waste.

(iii) Prohibition against placing liquids in CAMUs.

(I) The placement of bulk or noncontainerized liquid hazardous waste or free liquids contained in hazardous waste (whether or not sorbents have been added) in any CAMU is prohibited except where placement of such wastes facilitates the remedy selected for the waste.

(II) The requirements in part (14)(o)4 of this Rule for placement of containers holding free liquids in landfills apply to placement in a CAMU except where placement facilitates the remedy selected for the waste.

(III) The placement of any liquid which is not a hazardous waste in a CAMU is prohibited unless such placement facilitates the remedy selected for the waste or a demonstration is made pursuant to part (14)(o)6 of this Rule.

(IV) The absence or presence of free liquids in either a containerized or a bulk waste must be determined in accordance with part (14)(o)3 of this Rule.) Sorbents used to treat free liquids in CAMUs must meet the requirements of part (14)(o)5 of this Rule.

(iv) Placement of CAMU-eligible wastes into or within a CAMU does not constitute land disposal of hazardous wastes.

(v) Consolidation or placement of CAMU-eligible wastes into or within a CAMU does not constitute creation of a unit subject to minimum technology requirements.

2. (i) The Commissioner may designate a regulated unit (as defined in part (6)(a)1(ii) of this Rule as a CAMU, or may incorporate a regulated unit into a CAMU, if :

(I) The regulated unit is closed or closing, meaning it has begun the closure process under subparagraph (7)(d) of this Rule or subparagraph (7)(d) of Rule 1200-01-11-.05; and

(II) Inclusion of the regulated unit will enhance implementation of effective, protective and reliable remedial actions for the facility.

(ii) The paragraphs (6) (7), and (8) requirements and the unit-specific requirements of this Rule or Rule 1200-01-11-.05 that applied to the

regulated unit will continue to apply to that portion of the CAMU after incorporation into the CAMU.

3. The Commissioner shall designate a CAMU that will be used for storage and/or treatment only in accordance with part 6 of this subparagraph. The Commissioner shall designate all other CAMUs in accordance with the following:

   (i) The CAMU shall facilitate the implementation of reliable, effective, protective, and cost-effective remedies;

   (ii) Waste management activities associated with the CAMU shall not create unacceptable risks to humans or to the environment resulting from exposure to hazardous wastes or hazardous constituents;

   (iii) The CAMU shall include uncontaminated areas of the facility, only if including such areas for the purpose of managing CAMU-eligible waste is more protective than management of such wastes at contaminated areas of the facility;

   (iv) Areas within the CAMU, where wastes remain in place after closure of the CAMU, shall be managed and contained so as to minimize future releases, to the extent practicable;

   (v) The CAMU shall expedite the timing of remedial activity implementation, when appropriate and practicable;

   (vi) The CAMU shall enable the use, when appropriate, of treatment technologies (including innovative technologies) to enhance the long-term effectiveness of remedial actions by reducing the toxicity, mobility, or volume of wastes that will remain in place after closure of the CAMU; and

   (vii) The CAMU shall, to the extent practicable, minimize the land area of the facility upon which wastes will remain in place after closure of the CAMU.

4. The owner/operator shall provide sufficient information to enable the Commissioner to designate a CAMU in accordance with the criteria in this subparagraph. This must include, unless not reasonably available, information on:

   (i) The origin of the waste and how it was subsequently managed (including a description of the timing and circumstances surrounding the disposal and/or release):

   (ii) Whether the waste was listed or identified as hazardous at the time of disposal and/or release; and

   (iii) Whether the disposal and/or release of the waste occurred before or after the land disposal requirements of Rule 1200-01-11-.10 were in effect for the waste listing or characteristic.

5. The Commissioner shall specify, in the permit or order, requirements for CAMUs to include the following:

   (i) The areal configuration of the CAMU.

(ii) Except as provided in part 7 of this subparagraph, requirements for CAMU-eligible waste management to include the specification of applicable design, operation, treatment and closure requirements.

(iii) Minimum design requirements

CAMUs, except as provided in part 6 of this subparagraph, into which wastes are placed must be designed in accordance with the following:

(I) Unless the Commissioner approves alternate requirements under item (II) of this subpart, CAMUs that consist of new, replacement, or laterally expanded units must include a composite liner and a leachate collection system that is designed and constructed to maintain less than a 30-cm depth of leachate over the liner. For purposes of this subparagraph, composite liner means a system consisting of two components; the upper component must consist of a minimum 30-mil flexible membrane liner (FML), and the lower component must consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than $1x10^{-7}$ cm/sec. FML components consisting of high density polyethylene (HDPE) must be at least 60 mil thick. The FML component must be installed in direct and uniform contact with the compacted soil component;

(II) Alternate requirements

The Commissioner may approve alternate requirements if:

I. The Commissioner finds that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents into the ground water or surface water at least as effectively as the liner and leachate collection systems in item (I) of this subpart; or

II. The CAMU is to be established in an area with existing significant levels of contamination, and the Commissioner finds that an alternative design, including a design that does not include a liner, would prevent migration from the unit that would exceed long-term remedial goals.

(iv) Minimum treatment requirements

Unless the wastes will be placed in a CAMU for storage and/or treatment only in accordance with part 6 of this subparagraph, CAMU-eligible wastes that, absent this subparagraph, would be subject to the treatment requirements of Rule 1200-01-11-.10, and that the Commissioner determines contain principal hazardous constituents must be treated to the standards specified in item (III) of this subpart.

(I) Principal hazardous constituents are those constituents that the Commissioner determines pose a risk to human health and the environment substantially higher than the cleanup levels or goals at the site.

I. In general, the Commissioner will designate as principal hazardous constituents:

A. Carcinogens that pose a potential direct risk from ingestion or inhalation at the site at or above 10^{-3}; and

B. Non-carcinogens that pose a potential direct risk from ingestion or inhalation at the site an order of magnitude or greater over their reference dose.

II. The Commissioner will also designate constituents as principal hazardous constituents, where appropriate, when risks to human health and the environment posed by the potential migration of constituents in wastes to ground water are substantially higher than cleanup levels or goals at the site; when making such a designation, the Commissioner may consider such factors as constituent concentrations, and fate and transport characteristics under site conditions.

III. The Commissioner may also designate other constituents as principal hazardous constituents that the Commissioner determines pose a risk to human health and the environment substantially higher than the cleanup levels or goals at the site.

(II) In determining which constituents are "principal hazardous constituents," the Commissioner must consider all constituents which, absent this subparagraph, would be subject to the treatment requirements in Rule 1200-01-11-.10.

(III) Waste that the Commissioner determines contains principal hazardous constituents must meet treatment standards determined in accordance with item (IV) or item (V) of this subpart.

(IV) Treatment standards for wastes placed in CAMUs

I. For non-metals, treatment must achieve 90 percent reduction in total principal hazardous constituent concentrations, except as provided by subitem III of this item.

II. For metals, treatment must achieve 90 percent reduction in principal hazardous constituent concentrations as measured in leachate from the treated waste or media (tested according to the TCLP) or 90 percent reduction in total constituent concentrations (when a metal removal treatment technology is used), except as provided by subitem III of this item.

III. When treatment of any principal hazardous constituents to at 90 percent reduction standard would result in a concentration less than 10 times the Universal

Treatment Standard for that constituent, treatment to achieve constituent concentrations less than 10 times the Universal Treatment Standard is not required. Universal Treatment Standards are identified in subparagraph (3)(i) of Rule 1200-01-11-.10.

IV. For waste exhibiting the hazardous characteristic of ignitability, corrosivity or reactivity, the waste must also be treated to eliminate these characteristics.

V. For debris, the debris must be treated in accordance with subparagraph (3)(f) of Rule 1200-01-11-.10, or by methods or to levels established under subitems (iv)(IV)I through IV or item (iv)(V) of this subpart, whichever the Commissioner determines is appropriate.

VI. Alternatives to TCLP

For metal bearing wastes for which metals removal treatment is not used, the Commissioner may specify a leaching test other than the TCLP (SW846 Method 1311, item (2)(b)1(xi) of Rule 1200-01-11-.01 to measure treatment effectiveness, provided the Commissioner determines that an alternative leach testing protocol is appropriate for use, and that the alternative more accurately reflects conditions at the site that affect leaching.

(V) Adjusted standards

The Commissioner may adjust the treatment level or method in item (iv)(IV) of this subpart to a higher or lower level, based on one or more of the following factors, as appropriate. The adjusted level or method must be protective of human health and the environment:

I. The technical impracticability of treatment to the levels or by the methods in item (iv)(IV) of this subpart;

II. The levels or methods in item (iv)(IV) of this subpart would result in concentrations of principal hazardous constituents (PHCs) that are significantly above or below cleanup standards applicable to the site (established either site-specifically, or promulgated under state or federal law);

III. The views of the affected local community on the treatment levels or methods in item (iv)(IV) of this subpart as applied at the site, and, for treatment levels, the treatment methods necessary to achieve these levels;

IV. The short-term risks presented by the on-site treatment method necessary to achieve the levels or treatment methods in item (iv)(IV) of this subpart;

V. The long-term protection offered by the engineering design of the CAMU and related engineering controls:

A. Where the treatment standards in item (iv)(IV) of this subpart are substantially met and the principal hazardous constituents in the waste or residuals are of very low mobility; or

B. Where cost-effective treatment has been used and the CAMU meets the Subtitle C liner and leachate collection requirements for new land disposal units at parts (14)(b)3 and 4 of this Rule; or

C. Where, after review of appropriate treatment technologies, the Commissioner determines that cost-effective treatment is not reasonably available, and the CAMU meets the Subtitle C liner and leachate collection requirements for new land disposal units at parts (14)(b)3 and 4 of this Rule; or

D. Where cost-effective treatment has been used and the principal hazardous constituents in the treated wastes are of very low mobility; or

E. Where, after review of appropriate treatment technologies, the Commissioner determines that cost-effective treatment is not reasonably available, the principal hazardous constituents in the wastes are of very low mobility, and either the CAMU meets or exceeds the liner standards for new, replacement, or laterally expanded CAMUs in item (iii)(I) and (II) of this subpart, or the CAMU provides substantially equivalent or greater protection.

(VI) The treatment required by the treatment standards must be completed prior to, or within a reasonable time after, placement in the CAMU.

(VII) For the purpose of determining whether wastes placed in CAMUs have met site-specific treatment standards, the Commissioner may, as appropriate, specify a subset of the principal hazardous constituents in the waste as analytical surrogates for determining whether treatment standards have been met for other principal hazardous constituents. This specification will be based on the degree of difficulty of treatment and analysis of constituents with similar treatment properties.

(v) Except as provided in part 6 of this subparagraph, requirements for ground water monitoring and corrective action that are sufficient to:

(I) Continue to detect and to characterize the nature, extent, concentration, direction, and movement of existing releases of

hazardous constituents in ground water from sources located within the CAMU; and

(II) Detect and subsequently characterize releases of hazardous constituents to ground water that may occur from areas of the CAMU in which wastes will remain in place after closure of the CAMU; and

(III) Require notification to the Commissioner and corrective action as necessary to protect human health and the environment for releases to ground water from the CAMU.

(vi) Except as provided in part 6 of this subparagraph, closure and post-closure requirements:

(I) Closure of corrective action management units shall:

I. Minimize the need for further maintenance; and

II. Control, minimize, or eliminate, to the extent necessary to protect human health and the environment, for areas where wastes remain in place, post-closure escape of hazardous wastes, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, to surface waters, or to the atmosphere.

(II) Requirements for closure of CAMUs shall include the following, as appropriate and as deemed necessary by the Commissioner for a given CAMU:

I. Requirements for excavation, removal, treatment or containment of wastes; and

II. Requirements for removal and decontamination of equipment, devices, and structures used in CAMU-eligible waste management activities within the CAMU.

(III) In establishing specific closure requirements for CAMUs under part 5 of this subparagraph, the Commissioner shall consider the following factors:

I. CAMU characteristics;

II. Volume of wastes which remain in place after closure;

III. Potential for releases from the CAMU;

IV. Physical and chemical characteristics of the waste;

V. Hydrogeological and other relevant environmental conditions at the facility which may influence the migration of any potential or actual releases; and

VI. Potential for exposure of humans and environmental receptors if releases were to occur from the CAMU.

(IV) Cap requirements:

I. At final closure of the CAMU, for areas in which wastes will remain after closure of the CAMU, with constituent concentrations at or above remedial levels or goals applicable to the site, the owner or operator must cover the CAMU with a final cover designed and constructed to meet the following performance criteria, except as provided in subitem II of this item:

A. Provide long-term minimization of migration of liquids through the closed unit;

B. Function with minimum maintenance;

C. Promote drainage and minimize erosion or abrasion of the cover;

D. Accommodate settling and subsidence so that the cover's integrity is maintained; and

E. Have a permeability less than or equal to the permeablility of any bottom liner system or natural subsoils present.

II. The Commissioner may determine that modifications to subitem I of this item are needed to facilitate treatment or the performance of the CAMU (e. g., to promote biodegradation).

(V) Post-closure requirements as necessary to protect human health and the environment, to include, for areas where wastes will remain in place, monitoring and maintenance activities, and the frequency with which such activities shall be performed to ensure the integrity of any cap, final cover, or other containment system.

6. CAMUs used for storage and/or treatment only are CAMUs in which wastes will not remain after closure. Such CAMUs must be designated in accordance with all of the requirements of this subparagraph, except as follows:

(i) CAMUs that are used for storage and/or treatment only and that operate in accordance with the time limits established in the staging pile regulations at item 4(i)(III), part 8, and part 9 of subparagraph (22)(e) of this Rule are subject to the requirements for staging piles at items 4(i)(I) and (II), subpart 4(ii), part 5 and 6, and parts 10 and 11 of subparagraph (22)(e) of this Rule in lieu of the performance standards and requirements for CAMUs in this subparagraph at part 3 and subparts 5 (iii) through (vi).

(ii) CAMUs that are used for storage and/or treatment only and that do not operate in accordance with the time limits established in the staging pile regulations at item 4(i)(III), part 8, and part 9 of subparagraph (22)(e) of this Rule:

(I) Must operate in accordance with a time limit, established by the Commissioner, that is no longer than necessary to achieve a timely remedy selected for the waste, and

(II) Are subject to the requirements for staging piles at items 4(i)(I) and (II), subpart 4(ii), part 5 and part 6, and part 10 and part 11 of subparagraph (22)(e) of this Rule in lieu of the performance standards and requirements for CAMUs in this subparagraph at part 3 and subparts 5(iv) and 5(vi).

7. CAMUs into which wastes are placed where all wastes have constituent levels at or below remedial levels or goals applicable to the site do not have to comply with the requirements for liners at item (iii)(1) of part 5, caps at item (vi)(IV) of part 5, groundwater monitoring requirements at subpart (v) of part 5, or, for treatment and/or storage only CAMUs, the design standards at part 6 of this subparagraph.

8. The Commissioner shall provide public notice and a reasonable opportunity for public comment before designating a CAMU. Such notice shall include the rationale for any proposed adjustments under item 5 (iv)(V) of this subparagraph to the treatment standards in item 5 (iv)(IV) of this subparagraph.

9. Notwithstanding any other provision of this subparagraph, the Commissioner may impose additional requirements as necessary to protect human health and the environment.

10. Incorporation of a CAMU into an existing permit must be approved by the Commissioner according to the procedures for Department initiated permit modifications under subparagraph (9)(c) of Rule 1200-01-11-.07 , or according to the permit modification procedures of part (9)(c)5 of Rule 1200-01-11-.07.

11. The designation of a CAMU does not change the Department's existing authority to address clean-up levels, media-specific points of compliance to be applied to remediation at a facility, or other remedy selection decisions.

(d) Temporary Units (TU) [40 CFR 264.553]

1. For temporary tanks and container storage areas used to treat or store hazardous remediation wastes during remedial activities required under subparagraph (6)(l) of this Rule, or at a permitted facility that is not subject to subparagraph (6)(l) of this Rule, the Commissioner may designate a unit at the facility as a temporary unit. A temporary unit must be located within the contiguous property under the control of the owner/operator where the wastes to be managed in the temporary unit originated. For temporary units, the Commissioner may replace the design, operating, or closure standard applicable to these units under this Rule or Rule 1200-01-11-.05 with alternative requirements which protect human health and the environment.

2. Any temporary unit to which alternative requirements are applied in accordance with part 1 of this subparagraph shall be:

(i) Located within the facility boundary; and

(ii) Used only for treatment or storage of remediation wastes.

3. In establishing standards to be applied to a temporary unit, the Commissioner shall consider the following factors:

   (i) Length of time such unit will be in operation;

   (ii) Type of unit;

   (iii) Volumes of wastes to be managed;

   (iv) Physical and chemical characteristics of the wastes to be managed in the unit;

   (v) Potential for releases from the unit;

   (vi) Hydrogeological and other relevant environmental conditions at the facility which may influence the migration of any potential releases; and

   (vii) Potential for exposure of humans and environmental receptors if releases were to occur from the unit.

4. The Commissioner shall specify in the permit or order the length of time a temporary unit will be allowed to operate, to be no longer than a period of one year. The Commissioner shall also specify the design, operating, and closure requirements for the unit.

5. The Commissioner may extend the operational period of a temporary unit once for no longer than a period of one year beyond that originally specified in the permit or order, if the Commissioner determines that:

   (i) Continued operation of the unit will not pose a threat to human health and the environment; and

   (ii) Continued operation of the unit is necessary to ensure timely and efficient implementation of remedial actions at the facility.

6. Incorporation of a temporary unit or a time extension for a temporary unit into an existing permit shall be:

   (i) Approved in accordance with the procedures for Agency-initiated permit modifications under Rule 1200-01-11-.07(9)(c)2; or

   (ii) Requested by the owner/operator as a Class II modification according to the procedures under Rule 1200-01-11-.07(9)(c)5.

7. The Commissioner shall document the rationale for designating a temporary unit and for granting time extensions for temporary units and shall make such documentation available to the public.

(e) Staging Piles [40 CFR 264.554]

(Note: This subparagraph is written in a special format to make it easier to understand the regulatory requirements. Like other Department regulations, this establishes enforceable legal requirements. For this ``I'' and ``you'' refer to the owner/operator)

1. What is a staging pile? A staging pile is an accumulation of solid, non-flowing remediation waste (as defined in Rule 1200-01-11-.01(2)(a)) that is not a

containment building and is used only during remedial operations for temporary storage at a facility. A staging pile must be located within the contiguous property under the control of the owner/operator where the wastes to be managed in the staging pile originated. Staging piles must be designated by the Commissioner according to the requirements in this subparagraph.

(i) For the purposes of this subparagraph, storage includes mixing, sizing, blending, or other similar physical operations as long as they are intended to prepare the wastes for subsequent management or treatment.

(ii) [RESERVED]

2. When may I use a staging pile? You may use a staging pile to store hazardous remediation waste (or remediation waste otherwise subject to land disposal restrictions) only if you follow the standards and design criteria the Director has designated for that staging pile. The Commissioner must designate the staging pile in a permit or, at an interim status facility, in a closure plan or order (consistent with Rule 1200-01-11-.07(3)(c)1(v) and 2(v)). The Commissioner must establish conditions in the permit, closure plan, or order that comply with parts 4 through 11 of ths subparagraph.

3. What information must I provide to get a staging pile designated? When seeking a staging pile designation, you must provide:

(i) Sufficient and accurate information to enable the Commissioner to impose standards and design criteria for your staging pile according to parts 4 through 11 of this subparagraph;

(ii) Certification by a qualified Professional Engineer for technical data, such as design drawings and specifications, and engineering studies, unless the Commissioner determines, based on information that you provide, that this certification is not necessary to ensure that a staging pile will protect human health and the environment; and

(iii) Any additional information the Commissioner determines is necessary to protect human health and the environment.

4. What performance criteria must a staging pile satisfy? The Commissioner must establish the standards and design criteria for the staging pile in the permit, closure plan, or order.

(i) The standards and design criteria must comply with the following:

(I) The staging pile must facilitate a reliable, effective and protective remedy;

(II) The staging pile must be designed so as to prevent or minimize releases of hazardous wastes and hazardous constituents into the environment, and minimize or adequately control cross-media transfer, as necessary to protect human health and the environment (for example, through the use of liners, covers, run-off/run-on controls, as appropriate); and

(III) The staging pile must not operate for more than two years, except when the Commissioner grants an operating term

extension under part 9 of this subparagraph (entitled ``May I receive an operating extension for a staging pile?''). You must measure the two-year limit, or other operating term specified by the Commissioner in the permit, closure plan, or order, from the first time you place remediation waste into a staging pile. You must maintain a record of the date when you first placed remediation waste into the staging pile for the life of the permit, closure plan, or order, or for three years, whichever is longer

(ii) In setting the standards and design criteria, the Commissioner must consider the following factors:

(I) Length of time the pile will be in operation;

(II) Volumes of wastes you intend to store in the pile;

(III) Physical and chemical characteristics of the wastes to be stored in the unit;

(IV) Potential for releases from the unit;

(V) Hydrogeological and other relevant environmental conditions at the facility that may influence the migration of any potential releases; and

(VI) Potential for human and environmental exposure to potential releases from the unit;

5. May a staging pile receive ignitable or reactive remediation waste? You must not place ignitable or reactive remediation waste in a staging pile unless:

(i) You have treated, rendered or mixed the remediation waste before you placed it in the staging pile so that:

(I) The remediation waste no longer meets the definition of ignitable or reactive under Rule 12001-1-11-.02(3)(b) or (d); and

(II) You have complied with part (2)(h)2 of this Rule; or

(ii) You manage the remediation waste to protect it from exposure to any material or condition that may cause it to ignite or react.

6. How do I handle incompatible remediation wastes in a staging pile? The term ``incompatible waste'' is defined in Rule 1200-01-11-.01(2)(a). You must comply with the following requirements for incompatible wastes in staging piles:

(i) You must not place incompatible remediation wastes in the same staging pile unless you have complied with part (2)(h)2 of this Rule;

(ii) If remediation waste in a staging pile is incompatible with any waste or material stored nearby in containers, other piles, open tanks or land disposal units (for example, surface impoundments), you must separate the incompatible materials, or protect them from one another by using a dike, berm, wall or other device; and

(iii) You must not pile remediation waste on the same base where incompatible wastes or materials were previously piled, unless the base has been decontaminated sufficiently to comply with part (2)(h)2 of this Rule.

7. Are staging piles subject to Land Disposal Restrictions (LDR) and Minimum Technological Requirements (MTR)? No. Placing hazardous remediation wastes into a staging pile does not constitute land disposal of hazardous wastes or create a unit that is subject to the minimum technological requirements of RCRA 3004(o).

8. How long may I operate a staging pile? The Commissioner may allow a staging pile to operate for up to two years after hazardous remediation waste is first placed into the pile. You must use a staging pile no longer than the length of time designated by the Commissioner in the permit, closure plan, or order (the ``operating term''), except as provided in part 9 of this subparagraph.

9. May I receive an operating extension for a staging pile?

(i) The Commissioner may grant one operating term extension of up to 180 days beyond the operating term limit contained in the permit, closure plan, or order (see part 12 of this subparagraph for modification procedures). To justify to the Commissioner the need for an extension, you must provide sufficient and accurate information to enable the Commissioner to determine that continued operation of the staging pile:

(I) Will not pose a threat to human health and the environment; and

(II) Is necessary to ensure timely and efficient implementation of remedial actions at the facility.

(ii) The Commissioner may, as a condition of the extension, specify further standards and design criteria in the permit, closure plan, or order, as necessary, to ensure protection of human health and the environment.

10. What is the closure requirement for a staging pile located in a previously contaminated area?

(i) Within 180 days after the operating term of the staging pile expires, you must close a staging pile located in a previously contaminated area of the site by removing or decontaminating all:

(I) Remediation waste;

(II) Contaminated containment system components; and

(III) Structures and equipment contaminated with waste and leachate.

(ii) You must also decontaminate contaminated subsoils in a manner and according to a schedule that the Commissioner determines will protect human health and the environment.

(iii) The Commissioner must include the above requirements in the permit, closure plan, or order in which the staging pile is designated.

11. What is the closure requirement for a staging pile located in an uncontaminated area?

(i) Within 180 days after the operating term of the staging pile expires, you must close a staging pile located in an uncontaminated area of the site according to part (12)(i)1 and subparagraph (7)(b) of this Rule or according to Rule 1200-01-11-.05(12)(i) and Rule 1200-01-11-.05(7)(b).

(ii) The Commissioner must include the above requirement in the permit, closure plan, or order in which the staging pile is designated.

12. How may my existing permit (for example, RAP), closure plan, or order be modified to allow me to use a staging pile?

(i) To modify a permit, other than a RAP, to incorporate a staging pile or staging pile operating term extension, either:

(I) The Commissioner must approve the modification under the procedures for Department-initiated permit modifications in Rule 1200-01-11-.07(9)(c); or

(II) You must request a Class 2 modification under Rule 1200-01-11-.07(9)(c)5.

(ii) To modify a RAP to incorporate a staging pile or staging pile operating term extension, you must comply with the RAP modification requirements under Rule 1200-01-11-.07(11)(d)1 and (d)5.

(iii) To modify a closure plan to incorporate a staging pile or staging pile operating term extension, you must follow the applicable requirements under part (7)(c)3 of this Rule or Rule 1200-01-11-.05(7)(c)3.

(iv) To modify an order to incorporate a staging pile or staging pile operating term extension, you must follow the terms of the order and the applicable provisions of Rule 1200-01-11-.07(3)(c)1(v) or 2(v).

13. Is information about the staging pile available to the public? The Commissioner must document the rationale for designating a staging pile or staging pile operating term extension and make this documentation available to the public.

(f) Disposal of CAMU-eligible wastes in permitted hazardous waste landfills [40 CFR 264.555]

1. The Commissioner with regulatory oversight at the location where the cleanup is taking place may approve placement of CAMU-eligible wastes in hazardous waste landfills not located at the site from which the waste originated, without the wastes meeting the requirements of Rule 1200-01-11-.10, if the conditions in subparts (i) through (iii) of this part are met.

(i) The waste meets the definition of CAMU-eligible waste in subparts 1(i) and (ii) of subparagraph (c) of this paragraph.

(ii) The Commissioner with regulatory oversight at the location where the cleanup is taking place identifies principal hazardous constituents in such waste, in accordance with item (c)5(iv)(I) and (II) of this paragraph,

and requires that such principal hazardous constituents are treated to any of the following standards specified for CAMU-eligible wastes:

(I) The treatment standards under item (c)5(iv)(IV) of this paragraph; or

(II) Treatment standards adjusted in accordance with subitems 5(iv)(V)I, III, IV or section 5(iv)(V), V.A of subparagraph (c) of this paragraph.

(III) Treatment standards adjusted in accordance with section 5(iv)(V) V.B of subparagraph (c) of this paragraph, where treatment has been used and that treatment significantly reduces the toxicity or mobility of the principal hazardous constituents in the waste, minimizing the short-term and long-term threat posed by the waste, including the threat at the remediation site.

(iii) The landfill receiving the CAMU-eligible waste must have a RCRA hazardous waste permit, meet the requirements for new landfills in paragraph (14) of this Rule, and be authorized to accept CAMU-eligible wastes; for the purposes of this requirement, "permit" does not include interim status.

2. The person seeking approval shall provide sufficient information to enable the Commissioner with regulatory oversight at the location where the cleanup is taking place to approve placement of CAMU-eligible waste in accordance with part 1 of this subparagraph. Information required by subparts (c)4(i) through (iii) of this paragraph for CAMU applications must be provided, unless not reasonably available.

3. The Commissioner with regulatory oversight at the location where the cleanup is taking place shall provide public notice and a reasonable opportunity for public comment before approving CAMU eligible waste for placement in an off-site permitted hazardous waste landfill, consistent with the requirements for CAMU approval at part (c)8 of this paragraph. The approval must be specific to a single remediation.

4. Applicable hazardous waste management requirements in this subparagraph, including recordkeeping requirements to demonstrate compliance with treatment standards approved under this subparagraph, for CAMU-eligible waste must be incorporated into the receiving facility permit through permit issuance or permit modification, providing notice and an opportunity for comment and a hearing. Notwithstanding subparagraph (8)(g) of Rule 1200-01-11-.07 a landfill may not receive hazardous CAMU-eligible waste under this subparagraph unless its permit specifically authorizes receipt of such waste.

5. For each remediation, CAMU-eligible waste may not be placed in an off-site landfill authorized to receive CAMU-eligible waste in accordance with part 4 of this subparagraph until the following additional conditions have been met:

(i) The landfill owner/operator notifies the Commissioner responsible for oversight of the landfill and persons on the facility mailing list, maintained

in accordance with item (7)(e)3(i)(V) of Rule 1200-01-11-.07, of his or her intent to receive CAMU-eligible waste in accordance with this subparagraph; the notice must identify the source of the remediation waste, the principal hazardous constituents in the waste, and treatment requirements.

(ii) Persons on the facility mailing list may provide comments, including objections to the receipt of the CAMU-eligible waste, to the Commissioner within 15 days of the notification.

(iii) The Commissioner may object to the placement of the CAMU-eligible waste in the landfill within 30 days of notification; the Commissioner may extend the review period an additional 30 days because of public concerns or insufficient information.

(iv) CAMU-eligible wastes may not be placed in the landfill until the Commissioner has notified the facility owner/operator that he or she does not object to its placement.

(v) If the Commissioner objects to the placement or does not notify the facility owner/operator that he or she has chosen not to object, the facility may not receive the waste, notwithstanding subparagraph (8)(g) of Rule 1200-01-11-.07, until the objection has been resolved, or the owner/operator obtains a permit modification in accordance with the procedures of part (9)(c)5 of Rule 1200-01-11-.07 specifically authorizing receipt of the waste.

(vi) As part of the permit issuance or permit modification process of part 4 of this subparagraph, the Commissioner may modify, reduce, or eliminate the notification requirements of this subparagraph as they apply to specific categories of CAMU-eligible waste, based on minimal risk.

6. Generators of CAMU-eligible wastes sent off-site to a hazardous waste landfill under this subparagraph must comply with the requirements of subpart (1)(g)1(iv) of Rule 1200-01-11-10; off-site facilities treating CAMU-eligible wastes to comply with this subparagraph must comply with the requirements of subpart (1)(g)2(iv) of Rule 1200-01-11-.10 , except that the certification must be with respect to the treatment requirements of subpart 1(ii) of this subparagraph.

7. For the purposes of this subparagraph only, the “design of the CAMU” in subitem (c)5(iv)(V)V of this Rule means design of the permitted Subtitle C landfill.

(23)-(25) (RESERVED) [40 CFR 264 Subparts T-V]

(26) Drip Pads [40 CFR 264 Subpart W]

(a) Applicability [40 CFR 264.570]

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 December 6, 1990 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to December 6, 1990. 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.

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 parts (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 owner or operator 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 264.571]

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 whether 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 upgrades, 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 264.572]

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 requirements of subparagraph (d) of this paragraph (except subpart (d)1(iv)) and subparagraphs (e) and (f) of this paragraph, or

2. all of the requirements of subparagraph (d) of this paragraph (except part (d)2), and subparagraphs (e) and (f) of this paragraph.

(d) Design and Operating Requirements [40 CFR 264.573]

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 $1x10^{-7}$ 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 $1x10^{-7}$ 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 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 of this subparagraph.

(v) Be of sufficient structural strength and thickness to prevent failure due to physical contact, climatic conditions, 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 the industry such as the American Concrete Institute (ACI) or the American Society of Testing and Materials (ASTM) in judging the structural integrity requirement of this subparagraph.)

2. If an owner/operator elects to comply with part (c)1 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 to prevent releases into the adjacent subsurface soil or groundwater 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;

(II) Designed and operated to function without clogging through the scheduled closure of the drip pad; and

(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-off that might enter the system.

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. The owner/operator must determine if the residues are hazardous as per Rule 1200-01-11-.03(1)(b) and, if so, must manage them under Rules 1200-01-11-.02-.07, .09 and .10, and section 3010 of RCRA.

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 and as specified in the permit, 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 in 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 and clean up any leakage from below the drip pad, and establish a schedule for accomplishing the repairs;

        (IV) Within 24 hours after discovery of the condition, notify the Commissioner of the condition and, within 10 working days, provide 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 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 certification signed by an independent, qualified registered professional engineer, that the repairs and cleanup have been completed according to the written plan submitted in accordance with item (i)(IV) of this part.

14. Should a permit be necessary, the Commissioner will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

15. 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 264.574]

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 leak 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 264.575]

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 practicably 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. In addition, for the purpose of closure, post-closure, and financial responsibility, such a drip pad is then considered to be landfill, and the owner or operator must meet all of the requirements for landfills specified in paragraphs (7) and (8) of this Rule.

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 paragraph 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.

(27) Miscellaneous Units [40 CFR 264 Subpart X]

(a) Applicability [40 CFR 264.600]

The requirements in this subpart apply to owners and operators of facilities that treat, store, or dispose of hazardous waste in miscellaneous units, except as paragraph (1) of this Rule provides otherwise.

(b) Environmental Performance Standards [40 CFR 264.601]

A miscellaneous unit must be located, designed, constructed, operated, maintained, and closed in a manner that will ensure protection of human health and the environment. Permits for miscellaneous units are to contain such terms and provisions as necessary to protect human health and the environment, including, but not limited to, as appropriate, design and operating requirements, detection and monitoring requirements, and requirements for responses to releases of hazardous waste or hazardous constituents from the unit. Permit terms and provisions must include those requirements of paragraphs (9)-(15), (30), (31), and (32) of this Rule, Rule 1200-01-11-.07, 40 CFR 63 Subpart EEE, and 40 CFR 146 that are appropriate for the miscellaneous unit being permitted. Protection of human health and the environment includes, but is not limited to:

1. Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents in the ground water or subsurface environment, considering:

(i) The volume and physical and chemical characteristics of the waste in the unit, including its potential for migration through soil, liners, or other containing structures;

(ii) The hydrologic and geologic characteristics of the unit and the surrounding area;

(iii) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground water;

(iv) The quantity and direction of ground-water flow;

(v) The proximity to and withdrawal rates of current and potential ground-water users;

(vi) The patterns of land use in the region;

(vii) The potential for deposition or migration of waste constituents into subsurface physical structures, and into the root zone of food-chain crops and other vegetation;

(viii) The potential for health risks caused by human exposure to waste constituents; and

(ix) The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;

2. Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents in surface water, or wetlands or on the soil surface considering:

(i) The volume and physical and chemical characteristics of the waste in the unit;

(ii) The effectiveness and reliability of containing, confining, and collecting systems and structures in preventing migration;

(iii) The hydrologic characteristics of the unit and the surrounding area, including the topography of the land around the unit;

(iv) The patterns of precipitation in the region;

(v) The quantity, quality, and direction of ground-water flow;

(vi) The proximity of the unit to surface waters;

(vii) The current and potential uses of nearby surface waters and any water quality standards established for those surface waters;

(viii) The existing quality of surface waters and surface soils, including other sources of contamination and their cumulative impact on surface waters and surface soils;

(ix) The patterns of land use in the region;

(x) The potential for health risks caused by human exposure to waste constituents; and

(xi) The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.

3. Prevention of any release that may have adverse effects on human health or the environment due to migration of waste constituents in the air, considering:

(i) The volume and physical and chemical characteristics of the waste in the unit, including its potential for the emission and dispersal of gases, aerosols and particulates;

(ii) The effectiveness and reliability of systems and structures to reduce or prevent emissions of hazardous constituents to the air;

(iii) The operating characteristics of the unit;

(iv) The atmospheric, meteorologic, and topographic characteristics of the unit and the surrounding area;

(v) The existing quality of the air, including other sources of contamination and their cumulative impact on the air;

(vi) The potential for health risks caused by human exposure to waste constituents; and

(vii) The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.

(c) Monitoring, Analysis, Inspection, Response, Reporting, and Corrective Action [40 CFR 264.602]

Monitoring, testing, analytical data, inspections, response, and reporting procedures and frequencies must ensure compliance with subparagraph (b) of this paragraph, and subparagraphs (2)(f), (3)(d), (5)(f) and (g) and (h), and (6)(l) of this Rule as well as meet any additional requirements needed to protect human health and the environment as specified in the permit.

(d) Post-closure Care [40 CFR 264.603]

A miscellaneous unit that is a disposal unit must be maintained in a manner that complies with subparagraph (b) of this paragraph during the post-closure care period. In addition, if a treatment or storage unit has contaminated soils or ground water that cannot be completely removed or decontaminated during closure, then that unit must also meet the requirements of subparagraph (b) of this paragraph during post-closure care. The post-closure plan under subparagraph (7)(i) of this Rule must specify the procedures that will be used to satisfy this requirement.

(28)-(29) (RESERVED) [40 CFR 264 Subparts Y and Z]

(30) Air Emission Standards for Process Vents [40 CFR 264 Subpart AA]

(a) Applicability [40 CFR 264.1030]

1. The regulations in this subparagraph 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, 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(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, or

(iii) A unit that is exempt from permitting under the provisions of Rule 1200-01-11-.03(4)(e)2 (i.e., a “90-day” tank or container) and is not a recycling unit under the provisions of Rule 1200-01-11-.02(1)(f).

3. For the owner or operator of a facility subject to this paragraph and who received a final permit under RCRA section 3005 and/or T.C.A. §68-212-108 prior to December 6, 1996, the requirements of this paragraph shall be incorporated into the permit when the permit is reissued in accordance the requirements of Rule 1200-01-11-.07(7)(i) or reviewed in accordance with the requirements of Rule 1200-01-11-.07(8)(c)4. Until such date when the owner and operator receive a final permit incorporating the requirements of this paragraph, the owner and operator are subject to the requirements of Rule 1200-01-11-.05(27).

4. (Reserved) [40 CFR 264.1030(d)]

5. 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 (g) of this paragraph apply to process vents on hazardous waste recycling units previously exempt under Rule 1200-01-11-.02(1)(f)3(i). Other exemptions under Rules 1200-01-11-.02(1)(d), .03(4)(e), and .06(1)(b)7 are not affected by these requirements.)

(b) Definitions [40 CFR 264.1031]

As used in this paragraph, all terms not defined herein shall have the meaning given them in Tennessee Code Annotated §§68-212-101 et seq. and Rules 1200-01-11-.01 through .06 and .09.

"Air stripping operation" is a desorption operation employed to transfer one or more volatile components from a liquid mixture into a gas (air) either with or without the application of heat to the liquid. Packed towers, spray towers, and bubble-cap, sieve, or valve-type plate towers are among the process configurations used for contacting the air and a liquid.

"Bottoms receiver" means a container or tank used to receive and collect the heavier bottoms fractions of the distillation feed stream that remain in the liquid phase.

"Closed-vent system" means a system that is not open to the atmosphere and that is composed of piping, connections, and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device.

"Condenser" means a heat-transfer device that reduces a thermodynamic fluid from its vapor phase to its liquid phase.

"Connector" means flanged, screwed, welded, or other joined fittings used to connect two pipelines or a pipeline and a piece of equipment. For the purposes of reporting and recordkeeping, connector means flanged fittings that are not covered by insulation or other materials that prevent location of the fittings.

"Continuous recorder" means a data-recording device recording an instantaneous data value at least once every 15 minutes.

"Control device" means an enclosed combustion device, vapor recovery system, or flare. Any device the primary function of which is the recovery or capture of solvents or other organics for use, reuse, or sale (e.g., a primary condenser on a solvent recovery unit) is not a control device.

"Control device shutdown" means the cessation of operation of a control device for any purpose.

"Distillate receiver" means a container or tank used to receive and collect liquid material (condensed) from the overhead condenser of a distillation unit and from which the condensed liquid is pumped to larger storage tanks or other process units.

"Distillation operation" means an operation, either batch or continuous, separating one or more feed stream(s) into two or more exit streams, each exit stream having component concentrations different from those in the feed stream(s). The separation is achieved by the redistribution of the components between the liquid and vapor phase as they approach equilibrium within the distillation unit.

"Double block and bleed system" means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

"Equipment" means each valve, pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, or flange or other connector, and any control devices or systems required by this subpart.

"Flame zone" means the portion of the combustion chamber in a boiler occupied by the flame envelope.

"Flow indicator" means a device that indicates whether gas flow is present in a vent stream.

"First attempt at repair" means to take rapid action for the purpose of stopping or reducing leakage of organic material to the atmosphere using best practices.

"Fractionation operation" means a distillation operation or method used to separate a mixture of several volatile components of different boiling points in successive stages, each stage removing from the mixture some proportion of one of the components.

"Hazardous waste management unit shutdown" means a work practice or operational procedure that stops operation of a hazardous waste management unit or part of a hazardous waste management unit. An unscheduled work practice or operational procedure that stops operation of a hazardous waste management unit or part of a hazardous waste management unit for less than 24 hours is not a hazardous waste management unit shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping operation are not hazardous waste management unit shutdowns.

"Hot well" means a container for collecting condensate as in a steam condenser serving a vacuum-jet or steam-jet ejector.

"In gas/vapor service" means that the piece of equipment contains or contacts a hazardous waste stream that is in the gaseous state at operating conditions.

"In heavy liquid service" means that the piece of equipment is not in gas/vapor service or in light liquid service.

"In light liquid service" means that the piece of equipment contains or contacts a waste stream where the vapor pressure of one or more of the organic components in the stream is greater than 0.3 kilopascals (kPa) at 20 °C, the total concentration of the pure organic components having a vapor pressure greater than 0.3 kPa at 20 °C is equal to or greater than 20 percent by weight, and the fluid is a liquid at operating conditions.

"In situ sampling systems" means nonextractive samplers or in-line samplers.

"In vacuum service" means that equipment is operating at an internal pressure that is at least 5 kPa below ambient pressure.

"Malfunction" means any sudden failure of a control device or a hazardous waste management unit or failure of a hazardous waste management unit to operate in a normal or usual manner, so that organic emissions are increased.

"Open-ended valve or line" means any valve, except pressure relief valves, having one side of the valve seat in contact with hazardous waste and one side open to the atmosphere, either directly or through open piping.

"Pressure release" means the emission of materials resulting from the system pressure being greater than the set pressure of the pressure relief device.

"Process heater" means a device that transfers heat liberated by burning fuel to fluids contained in tubes, including all fluids except water that are heated to produce steam.

"Process vent" means any open-ended pipe or stack that is vented to the atmosphere either directly, through a vacuum-producing system, or through a tank (e.g., distillate receiver, condenser, bottoms receiver, surge control tank, separator tank, or hot well) associated with hazardous waste distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations.

"Repaired" means that equipment is adjusted, or otherwise altered, to eliminate a leak.

“Sampling connection system” means an assembly of equipment within a process or waste management unit used during periods of representative operation to take samples of the process or waste fluid. Equipment used to take non-routine grab samples is not considered a sampling connection system.

"Sensor" means a device that measures a physical quantity or the change in a physical quantity, such as temperature, pressure, flow rate, pH, or liquid level.

"Separator tank" means a device used for separation of two immiscible liquids.

"Solvent extraction operation" means an operation or method of separation in which a solid or solution is contacted with a liquid solvent (the two being mutually insoluble) to preferentially dissolve and transfer one or more components into the solvent.

"Startup" means the setting in operation of a hazardous waste management unit or control device for any purpose.

"Steam stripping operation" means a distillation operation in which vaporization of the volatile constituents of a liquid mixture takes place by the introduction of steam directly into the charge.

"Surge control tank" means a large-sized pipe or storage reservoir sufficient to contain the surging liquid discharge of the process tank to which it is connected.

"Thin-film evaporation operation" means a distillation operation that employs a heating surface consisting of a large diameter tube that may be either straight or tapered, horizontal or vertical. Liquid is spread on the tube wall by a rotating assembly of blades that maintain a close clearance from the wall or actually ride on the film of liquid on the wall.

"Vapor incinerator" means any enclosed combustion device that is used for destroying organic compounds and does not extract energy in the form of steam or process heat.

"Vented" means discharged through an opening, typically an open-ended pipe or stack, allowing the passage of a stream of liquids, gases, or fumes into the atmosphere. The passage of liquids, gases, or fumes is caused by mechanical means such as compressors or vacuum-producing systems or by process-related means such as evaporation produced by heating and not caused by tank loading and unloading (working losses) or by natural means such as diurnal temperature changes.

(c) Standards: Process Vents [40 CFR 264.1032]

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 of 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 procedures in part (e)3 of this paragraph shall be used to resolve the disagreement.

(d) Standards: Closed-vent Systems and Control Devices [40 CFR 264.1033]

1. (i) Owners or operators of closed-vent systems and control devices used to comply with provisions of this part 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 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 unit that begins operation after December 21, 1990, and is 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 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 1(ii)(III) 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).

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 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, less than 18.3 m/s (60 ft/s), except as provided in items (iv)(II) and (III) of this part.

   (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 x 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 (See Rule 1200-01-11-.01(2)(b)); and

H_i = Net heat of combustion of sample component i, kcal/9 mol at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D 2382-83 (See Rule 1200-01-11-.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:

$$\mathrm{Log}_{10}(V_{\max}) = (H_T + 28.8)/31.7$$

where:

28.8 = Constant,

31.7 = Constant,

H_T = The net heating value as determined in paragraph (e)(2) of this section.

(v) The maximum allowed velocity in m/s, $V_{\max}$, for an air-assisted flare shall be determined by the following equation:

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 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 the point at which the vent streams are combined.

(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 that regenerates the carbon bed directly in the control device such as a fixed-bed carbon adsorber, 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.

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, 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.

9. An alternative operational or process parameter may be monitored if it can be demonstrated that another parameter will ensure that the control device is operated in conformance with these standards and the control device's design specifications.

10. 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.

11. A closed-vent system shall meet either of the following design requirements:

(i) Closed-vent systems shall be designed to operate with no detectable emissions, as indicated by an instrument reading of less than 500 ppm 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.

12. 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 11(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)(I) of this part, 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)(II)I of this part shall be monitored annually and at other times as requested by the Commissioner, except as provided for in part 15 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 11(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)(III) of this part.

(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.

13. 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.

14. 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 average 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 which implements the requirements of paragraph (27) of this Rule; or

(II) The unit is equipped with and operating air emission controls in accordance with the applicable requirements of paragraphs (30) and (32) of this Rule or Rules 1200-01-11-.05(27 and (29); 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 which implements the requirements of paragraph (15) of this Rule; or

(II) Has designed and operates the incinerator in accordance with the interim status requirements of Rule 1200-01-11-.05(15).

(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 which implements the requirements of Rule 1200-01-11-.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(8).

15. 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 12(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 12(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 12(i)(II)II of this subparagraph as frequently as practicable during safe-to-monitor times.

16. The Reference Methods cited in preceding parts of this subparagraph are applicable as those methods exist on the effective date of these regulations.

(e) Test Methods and Procedures [40 CFR 264.1034]

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)12 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.

$$E_h = Q_{2sd} \left\{ \sum_{i=1}^{n} C_i MW_i \right\} [0.0416] [10^{-6}]$$

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 3(i)(IV) of this subparagraph) and by summing the annual total organic mass emission rates (E_A, as determined in item 3(i)(V) of this subparagraph) 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.

(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 subpart, 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, or analyzed for its individual organic constituents. (See 40 CFR 260.11; Rule 1200-01-11-.01(2)(b)1.)

(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 by using direct measurement as specified in subpart (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 these regulations.

(f) Recordkeeping Requirements [40 CFR 264.1035]

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).

(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)11 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" (see Rule 1200-01-11-.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 subitems I through VII 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 second 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 weight 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)I 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 subitems 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(iv)(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 a carbon adsorption system 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 a carbon adsorption system 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)15 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)15 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)12 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)-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, the Commissioner will specify the appropriate recordkeeping requirements.

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.

(g) Reporting Requirements [40 CFR 264.1036]

1. A semiannual report shall be submitted by owners and operators subject to the requirements of this paragraph to the Division Director by dates specified by the Commissioner. The report shall include the following information:

(i) The Environmental Protection Agency identification number, name, and address of the facility.

(ii) For each month during the semiannual reporting period, dates when the control device exceeded or operated outside of the design specifications as defined in subpart (f)3(iv) of this paragraph and as indicated by the control device monitoring required by part (d)6 of this paragraph and such exceedances were not corrected within 24 hours, or that a flare operated with visible emissions as defined in part (d)4 of this paragraph and as determined by Method 22 monitoring, the duration and cause of each exceedance or visible emissions, and any corrective measures taken.

2. If, during the semiannual reporting period, the control device does not exceed or operate outside of the design specifications as defined in subpart (f)3(iv) of this paragraph for more than 24 hours or a flare does not operate with visible emissions as defined in part (d)4 of this paragraph, a report to the Division Director is not required.

3. The Reference Methods cited in preceding parts of this subparagraph are applicable as those methods exist on the effective date of these regulations.

(h)-(t) (RESERVED) [40 CFR 264.1037-264.1049]

(31) Air Emission Standards for Equipment Leaks [40 CFR 264 Subpart BB]

(a) Applicability [40 CFR 264.1050]

1. The regulations in this subpart apply to owners and operators of facilities that treat, store, or dispose of hazardous wastes (except as provided in subparagraphs (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, 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(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, or

(iii) A unit that is exempt from permitting under the provisions of Rule 1200-01-11-.03(4)(e)2 (i.e., a "90-day" tank or container) and is not a recycling unit under the provisions of Rule 1200-01-11-.02(1)(f).

3. For the owner or operator of a facility subject to this paragraph and who received a final permit under RCRA section 3005 and/or T.C.A. §68-212-108 prior to December 6, 1996, the requirements of this paragraph shall be incorporated into the permit when the permit is reissued in accordance with the requirements of Rule 1200-01-11-.07(7)(i) or reviewed in accordance with the requirements of Rule 1200-01-11-.07(8)(c)4. Until such date when the owner or operator receives a final permit incorporating the requirements of this paragraph, the owner and operator is subject to the requirements of Rule 1200-01-11-.05(28).

4. 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.

5. 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.

6. 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.

7. (Reserved) [40 CFR 264.1050(g)]

8. 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 (p) of this paragraph apply to equipment associated with hazardous waste recycling units previously exempt under Rule 1200-01-11-.02(1)(f)3(i). Other exemptions under Rules 1200-01-11-.02(1)(d), and .06(1)(b)7 are not affected by these requirements.)

(b) Definitions [40 CFR 264.1051]

As used in this paragraph, all terms shall have the meaning given them in Rule 1200-01-11-.06(30)(b), Tennessee Code Annotated §§68-212-101 et seq. and Rules 1200-01-11-.01 through .06 and .09.

(c) Standards: Pumps in Light Liquid Service [40 CFR 264.1052]

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 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 paragraph 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 264.1053]

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 emissions 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 initially upon designation, annually, and at other times as requested by the Commissioner.

(e) Standards: Pressure Relief Devices in Gas/Vapor Service [40 CFR 264.1054]

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 264.1055]

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 meet one of the following requirements:

(i) Return the purged process fluid directly to the process line;

(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 (32)(e) through (32)(g) 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 264.1056]

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 264.1057]

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 two 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 264.1058]

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 (o) of this paragraph.

(j) Standards: Delay of Repair [40 CFR 264.1059]

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 264.1060]

1. Owners and operators of closed-vent systems and control devices subject to this paragraph shall comply with the provisions of subparagraph (30)(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 unit that begins operation after December 21, 1990, and is 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 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 264.1061]

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 that 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 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 264.1062]

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 (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 operator 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 264.1063]

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 subparagraph (c) through (m) of this paragraph, 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.

(ii) 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(2)(b)1);

(ii) Method 9060A (see 40 CFR 260.11; Rule 1200-01-11-.01(2)(b)1) of "Test Methods for Evaluating Solid Waste:, EPA Publication SW-846, for computing total organic concentration of the sample, 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 subparts 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 subparts 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 1200-01-11-.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 (30)(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 264.1064]

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 paragraph (31) 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 (30)(d)1(ii) of this Rule, an implementation schedule as specified in subpart (30)(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 (30)(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 (30)(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 part (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 (30)(f)3 of this Rule. Design documentation is specified in subparts (30(f)3(i) and (ii) of this Rule and monitoring, operating, and inspection information in subparts (30)(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, the Commissioner will specify the appropriate recordkeeping requirements.

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 and (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 part (c)5, part (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 design 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 a facility with equipment that is subject to this paragraph and to regulations at 40 CFR part 60, part 61, or part 63 may elect to determine compliance with this paragraph either by documentation pursuant to subparagraph (o) 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 the regulations at 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.

(p) Reporting Requirements [40 CFR 264.1065]

1. A semiannual report shall be submitted by owners and operators subject to the requirements of this paragraph to the Division Director by dates specified by the Commissioner. The report shall include the following information:

(i) The Environmental Protection Agency identification number, name, and address of the facility.

(ii) For each month during the semiannual reporting period:

(I) The equipment identification number of each valve for which a leak was not repaired as required in part (h)4 of this paragraph.

(II) The equipment identification number of each pump for which a leak was not repaired as required in part (c)3 and subpart (c)4(vi) of this paragraph.

(III) The equipment identification number of each compressor for which a leak was not repaired as required in part (d)7 of this paragraph.

(iii) Dates of hazardous waste management unit shutdowns that occurred within the semiannual reporting period.

(iv) For each month during the semiannual reporting period, dates when the control device installed as required by subparagraphs (c), (d), (e) or (f) of this paragraph exceeded or operated outside of the design specifications as defined in part (o)5 of this paragraph and as indicated by the control device monitoring required by subparagraph (k) of this paragraph and was not corrected within 24 hours, the duration and cause of each exceedance, and any corrective measures taken.

2. If, during the semiannual reporting period, leaks from valves, pumps, and compressors are repaired as required in part (h)4, part (c)3, subpart (c)4(vi) and part (d)7 of this paragraph, respectively, and the control device does not exceed or operate outside of the design specifications as defined in part (o)5 of this paragraph for more than 24 hours, a report to the Division Director is not required.

(q)-(dd) (RESERVED) [40 CFR 264.1066-264.1079]

(32) Air Emission Standards for Tanks, Surface Impoundments, and Containers [40 CFR 264 Subpart CC]

(a) Applicability [40 CFR 264.1080]

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) 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 a 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.

(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 subpart, 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 (e)9 of this paragraph, except as provided in subpart (c)3(v) of this paragraph.

(viii) A tank that has a process vent as defined in subparagraph (30)(b) of this Rule.

(ix) Wastewater treatment units as defined in Rule 1200-01-11-.01(2)(a).

3. For the owner and operator of a facility subject to this paragraph who received a final permit under RCRA section 3005 and/or T.C.A. §68-212-108 prior to December 6, 1996, the requirements of this paragraph shall be incorporated into the permit when the permit is reissued in accordance with the requirements of Rule 1200-01-11-.07(7)(i) or reviewed in accordance with the requirements of Rule 1200-01-11-.07(8)(c)4. Until such date when the permit is reissued in accordance with the requirements of Rule 1200-01-11-.07(7)(i) or reviewed in accordance with the requirements of Rule 1200-01-11-.07(8)(c)4, the owner and operator are subject to the requirements of Rule 1200-01-11-.05(29).

4. The requirements of this paragraph, except for the recordkeeping requirements specified in part (j)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 subpart, "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 (j)9 of this paragraph, explaining why an undue safety hazard would be created if air emission controls specified in subparagraphs (e) through (h) 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.

   (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 are managed at the facility in tanks or containers meeting the conditions of subpart 4(ii) of this subparagraph. 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 264.1080(e)]

(b) Definitions [40 CFR 264.1081]

As used in this paragraph, all terms shall have the meaning given to them in Rule 1200-01-11-.05(29)(b), the Act, and Rule .01 through .06 and .09.

(c) Standards: General [40 CFR 264.1082]

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 (e) through (h) 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 (32)(e) through (32)(h) 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 (d)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 (d)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 (d)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 (d)2 of this paragraph.

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(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 (d)2 of this paragraph.

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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 (d)2 of this paragraph.

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(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 managed continuously in waste management units which use air emission controls in accordance with the standards specified in subparagraph (e) through (h) 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 waste streams entering the process or 500 ppmw, whichever value is lower. The average VO concentration of each individual waste stream at the point of waste origination shall be determined using the procedures specified in part (d)1 of this paragraph. The average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedures specified in part (d)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 part (d)2 and (d)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 which implements the requirements of paragraph (15) of this Rule; or

II. Has designed and operates the incinerator in accordance with the interim status requirements of Rule 1200-01-11-.05(15).

(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 which implements the requirements of Rule 1200-01-11-.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(8).

(IX) For the purpose of determining the performance of an organic destruction or removal process in accordance with the conditions in each of item 3(ii)(I) through 3(ii)(VI) of this subparagraph, 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 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.

(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.

(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--Land Disposal Restrictions under Table ``Treatment Standards for Hazardous Waste'' in Rule 1200-01-11-.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(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(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 (d)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 (d)2 of this paragraph.

(ii) In performing a waste determination pursuant to subpart 4(i) of this subparagraph, 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 4(ii)(II) of this subparagraph.

(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 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 (d)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.

(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 (d)1 and subparagraph (j) 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.

(d) Waste Determination Procedures [40 CFR 264.1083]

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 (c)3(i)

of this paragraph from using air emission controls in accordance with standards specified in subparagraph (e) through (h) 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 hazardous waste stream is placed in a waste management unit exempted under the provisions of subpart (c)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 applicable VO concentration limits specified in subparagraph (c) of this paragraph.

(ii) For a waste determination that is required by subpart 1(i) of this subparagraph, the average VO concentration of a hazardous waste at the point of waste origination shall be determined in accordance with the procedures specified in Rule 1200-01-11-.05(29)(e)1(ii) through 1(iv).

2. Waste determination procedures for treated hazardous waste.

(i) An owner or operator shall perform the applicable waste determinations for each treated hazardous waste placed in waste management units exempted under the provisions of items (c)3(ii)(I) through (VI) of this paragraph from using air emission controls in accordance with standards specified in subparagraphs (e) through (h) 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 the exempt waste management unit, and therafter update the information used for the waste determination at least once evert 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 specificed in subpart (c)3(ii) of this paragraph are not achieved.

(ii) The waste determination for a treated hazardous waste shall be performed in accordance with the procedures specified in Rule 1200-01-11-.05(29)(e)2(ii) through 2(ix), as applicable to the treated hazardous waste.

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 standards specified in part (e)3 of this paragraph.

(ii) The maximum organic vapor pressure of the hazardous waste may be determined in accordance with the procedures specified in Rule 1200-01-11-.05(29)(e)3(ii) through 3(iv).

4. The procedure for determining no detectable organic emissions for the purpose of complying with this paragraph shall be conducted in accordance with the procedures specified in Rule 1200-01-11-.05(29)(e)4.

(e) Standards: Tanks [40 CFR 264.1084]

1. The provisions of this subparagraph apply to the control of air pollutant emissions from tanks for which part (c)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 item 2(i)(I) through 2(i)(III) of this subparagraph, 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.

(III) The hazardous waste in the tank is not treated by the owner or operator using a waste stabilization process, as defined in Rule 1200-01-11-.05(29)(b).

(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, 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.

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:

(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 (d)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.

A. During periods when it is necessary to provide access to the tank for performing the activities of section 3(ii)(III)II B of this subparagraph, 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 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 Rule 1200-01-11-.05(29)(b), 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 (j)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 subparts 5(i) through 5(iii) of this subparagraph.

(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 Rule 1200-01-11-.05(29)(b); 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:

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)(II) of this subparagraph 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, 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.

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 (j)2 of this paragraph.

(iv) Safety devices, as defined in Rule 1200-01-11-.05(29)(b), may be installed and operated as necessary on any tank complying with the requirements of 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(i) through 6(iii) of this subparagraph.

(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 Rule 1200-01-11-.05(29)(b). 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.

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 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.

V. In the event that the seal gap measurements do not conform to the specifications in item 6(i)(II) of this subparagraph, 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 (j)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 paragraph. 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 (j)2 of this paragraph.

(III) Prior to each inspection required by item 6(iii)(I) or 6(iii)(II) of this subparagraph, 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, 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.

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 Rule 1200-01-11-.05(29)(b), may be installed and operated as necessary on any tank complying with the requirements of 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.

(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 (h) 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 Rule 1200-01-11-.05(29)(b), 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 (h) 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 (j)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 (d)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 or 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 Rule 1200-01-11-.05(29)(b), 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 (32)(h) of this Rule.

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.

(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 (h) of this paragraph.

(iii) Safety devices, as defined in Rule 1200-01-11-.05(29)(b), 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.

(iv) The owner or operator shall inspect and monitor the closed-vent system and control device as specified in subparagraph (h) 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, to the tank from another tank subject to this subparagraph or from a surface impoundment 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 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 9(i) of this subparagraph 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 (c)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 (c)3(ii) of this paragraph.

(III) The hazardous waste meets the requirements of subpart (c)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 subpart 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.

(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.

(f) Standards: Surface Impoundments [40 CFR 264.1085]

1. The provisions of this subparagraph apply to the control of air pollutant emissions from surface impoundments for which part (c)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 provisions 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.

    (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 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, 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 Rule 1200-01-11-.05(29)(b), 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 subparagraph.

(IV) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in part (j)3 of this paragraph.

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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.

(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 (d)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 (h) 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 Rule 1200-01-11-.05(29)(b), 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 (h) 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 (j)3 of this paragraph.

5. The owner or operator shall transfer hazardous waste to a surface impoundment subject to this section in accordance with the following requirements:

(i) Transfer of hazardous waste, except as provided in subpart 5(ii) of this subparagraph, to the surface impoundment from another surface impoundment subject to this subparagraph or from a tank subject to subparagraph (e) 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 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 (c)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 (c)3(ii) of this paragraph.

(III) The hazardous waste meets the requirements of subpart (c)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.

   (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 surface impoundment 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 paragraph, 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 section of this paragraph as frequently as practicable during those times when a worker can safely access the cover.

(g) Standards: Containers [40 CFR 264.1086]

1. The provisions of this subparagraph apply to the control of air pollutant emissions from containers for which part (c)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 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 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 the container 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(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(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 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 Rule 1200-01-11-.05(29)(b), 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(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 in paragraph (32) of this Rule). 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 (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.

(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.

(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 Rule 1200-01-11-.05(29)(b) 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(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(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 need 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 Rule 1200-01-11-.05(29)(b), 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 accepted at the facility (i.e., does not meet the conditions for an empty container as specified in Rule 1200-01-11-.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 paragraph (32) 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 (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.

(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.

(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.

(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 item 5(ii)(I) and 5(ii)(II) of this subparagraph.

(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 (h) of this paragraph.

(iii) Safety devices, as defined in Rule 1200-01-11-.05(29)(b), 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.

(iv) Owners and operators using Container Level 3 controls in accordance with the provisions of this subpart shall inspect and monitor the closed-vent systems and control devices as specified in subparagraph (h) of this paragraph.

(v) Owners and operators that use Container Level 3 controls in accordance with the provisions of this subpart shall prepare and maintain the records specified in part (j)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 operation; 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.

(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 requirement of item 4(i)(II) of this subparagraph, the procedure specified in part (d)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 $\pm$ 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.

(h) Standards: Closed-vent Systems and Control Devices [40 CFR 264.1087]

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 subparagraph (30)(d) 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 or a seal or locking device as specified in item 2(iii)(II) of this subparagraph. 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 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 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 (30)(d)12 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 (30)(d)3 of this Rule; or

(III) A flare designed and operated in accordance with the requirements of part (30)(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 item 3(ii)(I) through 3(ii)(VI) of this subparagraph.

(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, 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 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 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 (i.e., planned routine maintenance of a 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, as applicable, shall not exceed 240 hours per year) by recording the information specified in item (j)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, 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, and/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 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 (30)(d)7 or 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 (30)(d)14 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 shall operate and maintain the control device in accordance with the requirements of part (30)(d)10 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 as follows:

(I) An owner or operator shall demonstrate using either a performance test as specified in item 3(v)(III) of this subparagraph or a design analysis as specified in item 3(v)(IV) of this subparagraph 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 and has designed and operates the unit in accordance with the requirements of Rule 1200-01-11-.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(8).

(II) An owner or operator shall demonstrate the performance of each flare in accordance with the requirements specified in part (30)(d)5.

(III) For a performance test conducted to meet the requirements of item 3(v)(I) of this subparagraph, the owner or operator shall use the test methods and procedures specified in subpart (30)(e)3(i) through (3)(iv).

(IV) For a design analysis conducted to meet the requirements of item 3(v)(I) of this subparagraph, the design analysis shall meet the requirements specified in item (3)(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 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. 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 (30)(d)6(ii) and part (30)(d)12 of this Rule. The readings from each monitoring device required by subpart (30)(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.

(i) Inspection and Monitoring Requirements [40 CFR 264.1088]

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 subparagraph (e) through (h) of this paragraph.

2. The owner or operator shall develop and implement a written plan and schedule to perform the inspections and monitoring required by 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.

(j) Recordkeeping Requirements [40 CFR 264.1089]

1. Each owner or operator of a facility subject to requirements of 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 (e) through (h) of this paragraph in accordance with the conditions specified in part (a)4 or subpart (a)2(vii) of this paragraph.

2. The owner or operator of a tank using air emission controls in accordance with the requirements of subparagraph (e) 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 (e) 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 (e) 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 requirements of subparagraph (e) 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, 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 (e)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 (e)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 (e)4 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 (e)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 (e)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 (e)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 (e)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 subparagraph.

3. The owner or operator of a surface impoundment using air emission controls in accordance with the requirements of subparagraph (f) 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 (f)3 of this paragraph.

(iii) 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 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 (f)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 (g) 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 (h) 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 or by performance tests as specified in item 5(i)(III) of this subparagraph 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 (30)(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 (30)(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 (30)(f)2(iii) and all test results.

(IV) Information as required by subpart (30)(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 5(i)(V)II of this subparagraph for those planned routine maintenance operations that would require the control device not to meet the requirements of item (h)3(i)(I), 3(i)(II), or 3(i)(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 (h)3(i)(I), 3(i)(II), or 3(i)(III) 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 5(i)(VI)III of this subparagraph for those unexpected control device system malfunctions that would

require the control device not to meet the requirements of item (h)3(i)(I), 3(i)(II), or 3(i)(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 (h)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 (c)3 of this paragraph shall prepare and maintain the following records, as applicable:

(i) For tanks, surface impoundments, and containers exempted under the hazardous waste organic concentration conditions specified in subpart (c)3(i) or items (c)(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 (d) of this paragraph.

(ii) For tanks, surface impoundments, or containers exempted under the provisions of item (c)3(ii)(VII) or (c)3(ii)(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 (e)12 or (f)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 sections 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 (e) through (h) 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 are managed at the facility in tanks and containers. This description shall include:

(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 in the tanks and containers as described in subpart 9(ii) of this subparagraph would create an undue safety hazard if the air emission controls, as required under subparagraph (e) through (h) 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 paragraph, 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 subpart, 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 subparagraph (e) through (h) of this paragraph in accordance with the requirements of subpart (a)2(vii) of this paragraph, the owner or 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.

(k) Reporting Requirements [40 CFR 264.1090]

1. Each owner or operator managing hazardous waste in a tank, surface impoundment, or container exempted from using air emission controls under the provisions of part (c)3 of this paragraph shall report to the Commissioner each occurrence when hazardous waste is placed in the waste management unit in noncompliance with the conditions specified in subpart (c)3(i) or 3(ii) of this paragraph, as applicable. Examples of such occurrences include placing in the waste management unit a hazardous waste having an average VO concentration equal to or greater than 500 ppmw at the point of waste origination; or placing in the waste management unit a treated hazardous waste of which the organic content has been reduced by an organic destruction or removal process that fails to achieve the applicable conditions specified in items (c)3(ii)(I) through 3(ii)(VI) of this paragraph. The owner or operator shall submit a written report within 15 calendar days of the time that the owner or operator becomes aware of the occurrence. The written report shall contain the Installation Identification Number, facility name and address, a description of the noncompliance event and the cause, the dates of the noncompliance, and the actions taken to correct the noncompliance and prevent recurrence of the noncompliance. The report shall be signed and dated by an authorized representative of the owner or operator.

2. Each owner or operator using air emission controls on a tank in accordance with the requirements of part (e)3 of this paragraph shall report to the Commissioner each occurrence when hazardous waste is managed in the tank in noncompliance with the conditions specified in part (e)2 of this paragraph. The owner or operator shall submit a written report within 15 calendar days of the time that the owner or operator becomes aware of the occurrence. The written report shall contain the Installation Identification Number, facility name and address, a description of the noncompliance event and the cause, the dates of the noncompliance, and the actions taken to correct the noncompliance and prevent recurrence of the noncompliance. The report shall be signed and dated by an authorized representative of the owner or operator.

3. Each owner or operator using a control device in accordance with the requirements of subparagraph (h) of this paragraph shall submit a semiannual written report to the Commissioner except as provided for in part 4 of this

subparagraph. The report shall describe each occurrence during the previous 6 - month period when either:

(i) A control device is operated continuously for 24 hours or longer in noncompliance with the applicable operating values defined in subpart (30)(f)3(iv) of this Rule; or

(ii) A flare is operated with visible emissions for 5 minutes or longer in a two hour period, as defined in part (30)(d)4 of this Rule.

The written report shall include the Installation Identification Number, facility name and address, and an explanation why the control device could not be returned to compliance within 24 hours, and actions taken to correct the noncompliance. The report shall be signed and dated by an authorized representative of the owner or operator.

4. A report to the Commissioner in accordance with the requirements of part 3 of this subparagraph is not required for a 6 - month period during which all control devices subject to this paragraph are operated by the owner or operator such that;

(i) During no period of 24 hours or longer did a control device operate continuously in noncompliance with the applicable operating values defined in subpart (30)(f)3(iv) of this Rule; and

(ii) No flare was operated with visible emissions for 5 minutes or longer in a two hour period as defined in part (3)(d)4 of this Rule.

(l) (RESERVED) [40 CFR 264.1091]

(33) Containment Buildings [40 CFR 264 Subpart DD]

(a) Applicability [40 CFR 264.1100]

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(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 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;

2. Has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel, wastes, 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 practicable 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 sufficient to prevent fugitive dust emissions to meet the no visible emission standard in item (b)3(i)(IV) of this paragraph; 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 264.1101]

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 paragraph. 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 (b)3(i)(IV) of this paragraph; 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 minimize 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.

(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 part (10)(d)2 and subparts (10)(d)3(i) and (ii) 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 November 16, 1992. 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 (see 40 CFR part 60, appendix A, Method 22-Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares). In addition, all associated particulate collection devices (e.g., fabric filter, electrostatic precipitator) must be operated and maintained with sound air pollution control practices (see 40 CFR part 60 subpart 292 for guidance). This state of no visible emissions must be maintained effectively at all times during routine operating and maintenance conditions, including when vehicles and personnel are entering and exiting the unit.

(ii) Obtain and keep on-site a 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, except for Performance Track member facilities that must inspect at least once each month, upon approval by the Regional Administrator data gathered from monitoring equipment 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 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 264.1102]

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(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.

(d)-(k) (RESERVED) [40 CFR 264.1103-264.1110]

(34) Hazardous Waste Munitions and Explosives Storage [40 CFR 264 Subpart EE]

(a) Applicability [40 CFR 264.1200]

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 (33) of this Rule),

tanks (paragraph (10) of this Rule), or containers (paragraph (9) of this Rule); see Rule 1200-01-11-.09(13)(f) for storage of waste military munitions.)

(b) Design and Operating Standards [40 CFR 264.1201]

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 264.1202]

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(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 (subparagraph (14)(k) of this Rule).

(35)-(56) (RESERVED)

(57) Appendices to Rule 1200-01-11-.06 [40 CFR 264 Appendices]

Appendix I -- Recordkeeping Instructions

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 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:

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 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(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(4), and each hazardous waste characteristic defined in rule 1200-01-11-.02(3), has a four-digit Hazardous Waste Code assigned to it. This number 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;

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.

(i) 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)

(ii) Treatment

(I) 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)

(II) 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)

(III) Physical Treatment

I. 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)

II. 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)

(IV) Biological Treatment

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]

(V) 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)

(VI) Other Treatment

T94 Containment Building (Treatment)

(iii) 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)

(iv) Miscellaneous (Subpart X)

X01 Open Burning/Open Detonation

X02 Mechanical Processing

X03 Thermal Unit

X04 Geologic Repository

X99 Other Subpart X (specify)

Appendices II -- III - (RESERVED)

Appendix IV -- Cochran's Approximation to the Behrens-Fisher Students' t-Test

Using all the available background data (n_b readings), calculate the background mean (X_b) and background variance (s_b^2). For the single monitoring well under investigation (n_m reading), calculate the monitoring mean (X_m) and monitoring variance (s_m^2).

For any set of data (X_1, X_2, . . ., X_n) the mean is calculated by:

$$\overline{X} = \frac{X_1 + X_2 \ldots + X_n}{n}$$

and the variance is calculated by:

$$s^2 = \frac{(X_1 - \overline{X})^2 + (X_2 - \overline{X})^2 \ldots + (X_n - \overline{X})^2}{n - 1}$$

where "n" denotes the number of observations in the set of data.

The t-test uses these data summary measures to calculate a t-statistic (t^*) and a comparison t-statistic (t_c). The t^* value is compared to the t_c value and a conclusion reached as to whether there has been a statistically significant change in any indicator parameter.

The t-statistic for all parameters except pH and similar monitoring parameters is:

$$t^* = \frac{X_m - \overline{X}_s}{\sqrt{\frac{S_m^2}{n_m} + \frac{S_b^2}{n_b}}}$$

If the value of this t-statistic is negative then there is no significant difference between the monitoring data and background data. It should be noted that significantly small negative values may be indicative of a failure of the assumption made for test validity or errors have been made in collecting the background data.

The t-statistic (t_c), against which t^* will be compared, necessitates finding t_b and t_m from standard (one-tailed) tables where,

t_b = t-tables with ($n_b - 1$) degrees of freedom, at the 0.05 level of significance.

t_m = t-tables with ($n_m - 1$) degrees of freedom, at the 0.05 level of significance.

Finally, the special weightings W_b and W_m are defined as:

$$W_B = \frac{s_b^2}{n_b} \quad and \quad W_m = \frac{s_m^2}{n_m}$$

and so the comparison t-statistic is:

$$t_c = \frac{W_b t_b + W_m t_m}{W_b + W_m}$$

The t-statistic (t^*) is now compared with the comparison t-statistic (t_c) using the following decision-rule:

If t^* is equal to or larger than t_c, then conclude that there most likely has been a significant increase in this specific parameter.

If t^* is less than t_c, then conclude that most likely there has not been a change in this specific parameter.

The t-statistic for testing pH and similar monitoring parameters is constructed in the same manner as previously described except the negative sign (if any) is discarded and the caveat concerning the negative value is ignored. The standard (two-tailed) tables are used in the construction t_c for pH and similar monitoring parameters.

If t^* is equal to or larger than t_c, then conclude that there most likely has been a significant increase (if the initial t^* had been negative, this would imply a significant decrease). If t^* is less than t_c, then conclude that there most likely has been no change.

A further discussion of the test may be found in Statistical Methods (6th Edition, Section 4.14) by G. W. Snedecor and W. G. Cochran, or Principles and Procedures of Statistics (1st Edition, Section 5.8) by R. G. D. Steel and J. H. Torrie.

Standard t-Tables 0.05 Level of Significance

Degrees of freedom	t-values (one-tail)	t-values (two-tail)
1	6.314	12.706
2	2.920	4.303
3	2.353	3.182
4	2.132	2.776
5	2.015	2.571
6	1.943	2.447
7	1.895	2.365
8	1.860	2.306
9	1.833	2.262
10	1.812	2.228
11	1.796	2.201
12	1.782	2.179
13	1.771	2.160
14	1.761	2.145
15	1.753	2.131
16	1.746	2.120
17	1.740	2.110
18	1.734	2.101
19	1.729	2.093
20	1.725	2.086
21	1.721	2.080
22	1.717	2.074
23	1.714	2.069
24	1.711	2.064
25	1.708	2.060
30	1.697	2.042
40	1.684	2.021

Footnote: Adopted from Table III of "Statistical Tables for Biological, Agricultural, and Medical Research" (1947, R. A. Fisher and F. Yates).

Appendix V -- Examples of Potentially Incompatible Waste

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

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

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

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

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

Group 1-A

Acetylene sludge
Alkaline caustic liquids
Alkaline cleaner
Alkaline corrosive liquids
Alkaline corrosive battery fluid
Caustic wastewater
Lime sludge and other corrosive alkalies
Lime wastewater
Lime and water
Spent caustic

Group 1-B

Acid sludge
Acid and water
Battery acid
Chemical cleaners
Electrolyte, acid
Etching acid liquid or solvent
Pickling liquor and other corrosive acids
Spent acid
Spent mixed acid
Spent sulfuric acid

Potential consequences: Heat generation; violent reaction.

* * * * * * * * * *

Group 2-A

Aluminum

Beryllium
Calcium
Lithium
Magnesium
Potassium
Sodium
Zinc powder
Other reactive metals and metal hydrides

Group 2-B

Any waste in Group 1-A or 1-B

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

* * * * * * * * * *

Group 3-A

Alcohols
Water

Group 3-B

Any concentrated waste in Groups 1-A or 1-B
Calcium
Lithium
Metal hydrides
Potassium
SO_2Cl_2, $SOCl_2$, PCl_3, CH_3SiCl_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
Hypochlorites
Nitrates
Nitric acid, fuming
Perchlorates
Permanganates
Peroxides
Other strong oxidizers

Group 6-B

Acetic acid and other organic acids
Concentrated mineral acids
Group 2-A wastes
Group 4-A wastes
Other flammable and combustible wastes

Potential consequences: Fire, explosion, or violent reaction.

Source: "Law, Regulations, and Guidelines for Handling of Hazardous Waste." California Department of Health, February 1975.

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Appendix VI - (RESERVED)

Appendix VII -- Appendix VIII - (RESERVED)

Appendix IX - Ground-Water Monitoring List

Common Name[1]	CAS RN[2]	Chemical Abstracts Service Index Name[3]
Acenaphthene	83-32-9	Acenaphthylene, 1,2-dihydro-
Acenaphthylene	208-96-8	Acenaphthylene
Acetone	67-64-1	2-Propanone
Acetophenone	98-86-2	Ethanone, 1-phenyl-
Acetonitrile; Methyl cyanide	75-05-8	Acetonitrile
2-Acetylaminofluorene; 2-AAF	53-96-3	Acetamide, N-9H-fluoren-2-yl-
Acrolein	107-02-8	2-Propenal
Acrylonitrile	107-13-1	2-Propenenitrile
Aldrin	309-00-2	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro- 1,4,4a,5,8,8a-hexahydro- (1α,4α,4aβ,5α, 8α,8aβ)-
Allyl chloride	107-05-1	1-Propene, 3-chloro-
4-Aminobiphenyl	92-67-1	[1,1'-Biphenyl]-4-amine
Aniline	62-53-3	Benzenamine
Anthracene	120-12-7	Anthracene
Antimony	(Total)	Antimony
Aramite	140-57-8	Sulfurous acid, 2-chloroethyl 2-[4-(1,1-dimethylethyl)phenoxy]-1-methylethyl ester
Arsenic	(Total)	Arsenic
Barium	(Total)	Barium
Benzene	71-43-2	Benzene
Benzo[a]anthracene; Benzanthracene	56-55-3	Benz[a]anthracene
Benzo[b]fluoranthene	205-99-2	Benz[e]acephenanthrylene
Benzo[k]fluoranthene	207-08-9	Benzo[k]fluoranthene
Benzo[ghi]perylene	191-24-2	Benzo[ghi]perylene
Benzo[a]pyrene	50-32-8	Benzo[a]pyrene
Benzyl alcohol	100-51-6	Benzenemethanol
Beryllium	(Total)	Beryllium
alpha-BHC	319-84-6	Cyclohexane, 1,2,3,4,5,6-hexachloro- (1α,-2α,3β,4β,5β,6β)-
beta-BHC	319-85-7	Cyclohexane, 1,2,3,4,5,6-hexachloro- (1α,2β,3α,4β,5α,6β)-

delta-BHC	319-86-8	Cyclohexane, 1,2,3,4,5,6-hexachloro-(1α,2α, 3α,4β,5α,6β)-
gamma-BHC; Lindane	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-(1α,2α,3β,4α,5α,6β)-
Bis(2-chloroethoxy)methane	111-91-1	Ethane, 1,1'-[methylenebis (oxy)]bis[2-chloro-
Bis(2-chloroethyl)ether	111-44-4	Ethane, 1,1'-oxybis[2-chloro-
Bis(2-chloro-1-methylethyl) ether; 2,2'-Di-chlorodiisopropyl ether	108-60-1	Propane, 2,2'-oxybis[1-chloro-
Bis(2-ethylhexyl) phthalate	117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl)ester
Bromodichloromethane	75-27-4	Methane, bromodichloro-
Bromoform; Tribromomethane	75-25-2	Methane, tribromo-
4-Bromophenyl phenyl ether	101-55-3	Benzene, 1-bromo-4-phenoxy-
Butyl benzyl phthalate; Benzyl butyl phthalate	85-68-7	1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester
Cadmium	(Total)	Cadmium
Carbon disulfide	75-15-0	Carbon disulfide
Carbon tetrachloride	56-23-5	Methane, tetrachloro-
Chlordane	57-74-9	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-
p-Chloroaniline	106-47-8	Benzenamine, 4-chloro-
Chlorobenzene	108-90-7	Benzene, chloro-
Chlorobenzilate	510-15-6	Benzeneacetic acid, 4-chloro-α-(4-chlorophenyl)-α-hydroxy-, ethyl ester
p-Chloro-m-cresol	59-50-7	Phenol, 4-chloro-3-methyl-
Chloroethane; Ethyl chloride	75-00-3	Ethane, chloro-
Chloroform	67-66-3	Methane, trichloro-
2-Chloronaphthalene	91-58-7	Naphthalene, 2-chloro-
2-Chlorophenol	95-57-8	Phenol, 2-chloro-
4-Chlorophenyl phenyl ether	7005-72-3	Benzene, 1-chloro-4-phenoxy-
Chloroprene	126-99-8	1,3-Butadiene, 2-chloro-
Chromium	(Total)	Chromium
Chrysene	218-01-9	Chrysene
Cobalt	(Total)	Cobalt
Copper	(Total)	Copper
m-Cresol	108-39-4	Phenol, 3-methyl-

o-Cresol	95-48-7	Phenol, 2-methyl-
p-Cresol	106-44-5	Phenol, 4-methyl-
Cyanide	57-12-5	Cyanide
2,4-D; 2,4-Dichlorophenoxyacetic acid	94-75-7	Acetic acid, (2,4-dichlorophenoxy)-
4,4'-DDD	72-54-8	Benzene 1,1'-(2,2-dichloroethylidene)bis[4-chloro-
4,4'-DDE	72-55-9	Benzene, 1,1'-(dichloroethenylidene)bis[4-chloro-
4,4'-DDT	50-29-3	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-
Diallate	2303-16-4	Carbamothioic acid, bis(1-methylethyl)- , S- (2,3-dichloro-2-propenyl) ester
Dibenz[a,h]anthracene	53-70-3	Dibenz[a,h]anthracene
Dibenzofuran	132-64-9	Dibenzofuran
Dibromochloromethane; Chlorodibromomethane	124-48-1	Methane, dibromochloro-
1,2-Dibromo-3-chloropropane; DBCP	96-12-8	Propane, 1,2-dibromo-3-chloro-
1,2-Dibromoethane; Ethylene dibromide	106-93-4	Ethane, 1,2-dibromo-
Di-n-butyl phthalate	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester
o-Dichlorobenzene	95-50-1	Benzene, 1,2-dichloro-
m-Dichlorobenzene	541-73-1	Benzene, 1,3-dichloro-
p-Dichlorobenzene	106-46-7	Benzene, 1,4-dichloro-
3,3'-Dichlorobenzidine	91-94-1	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-
trans-1,4-Dichloro-2-butene	110-57-6	2-Butene, 1,4-dichloro-, (E)-
Dichlorodifluoromethane	75-71-8	Methane, dichlorodifluoro-
1,1-Dichloroethane	75-34-3	Ethane, 1,1-dichloro-
1,2-Dichloroethane; Ethylene dichloride	107-06-2	Ethane, 1,2-dichloro-
1,1-Dichloroethylene; Vinylidene chloride	75-35-4	Ethene, 1,1-dichloro-
trans-1,2-Dichloroethylene	156-60-5	Ethene, 1,2-dichloro-, (E)-
2,4-Dichlorophenol	120-83-2	Phenol, 2,4-dichloro-
2,6-Dichlorophenol	87-65-0	Phenol, 2,6-dichloro-
1,2-Dichloropropane	78-87-5	Propane, 1,2-dichloro-
cis-1,3-Dichloropropene	10061-01-5	1-Propene, 1,3-dichloro-, (Z)-
trans-1,3-Dichloropropene	10061-02-6	1-Propene, 1,3-dichloro-, (E)-

Dieldrin	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-, (1aα,2β,2aα,3β,6β,6aα,7β,7aα)-
Diethyl phthalate	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester
O,O-Diethyl O-2-pyrazinyl phosphorothioate; Thionazin	297-97-2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester
Dimethoate	60-51-5	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester
p-(Dimethylamino)azo-benzene	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-
7,12-Dimethylbenz[a]anthracene	57-97-6	Benz[a]anthracene, 7,12-dimethyl-
3,3'Dimethylbenzidine	119-93-7	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-
alpha, alpha-Dimethylphenethylamine	122-09-8	Benzeneethanamine, α,α-dimethyl-
2,4-Dimethylphenol	105-67-9	Phenol, 2,4-dimethyl-
Dimethyl phthalate	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester
m-Dinitrobenzene	99-65-0	Benzene, 1,3-dinitro-
4,6-Dinitro-o-cresol	534-52-1	Phenol, 2-methyl-4,6-dinitro-
2,4-Dinitrophenol	51-28-5	Phenol, 2,4-dinitro-
2,4-Dinitrotoluene	121-14-2	Benzene, 1-methyl-2,4-dinitro-
2,6-Dinitrotoluene	606-20-2	Benzene, 2-methyl-1,3-dinitro-
Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-
Di-n-octyl phthalate	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester
1,4-Dioxane	123-91-1	1,4-Dioxane
Diphenylamine	122-39-4	Benzenamine, N-phenyl-
Disulfoton	298-04-4	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl]ester
Endosulfan I	959-98-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide, (3α,5 αβ,6α,9α,9aβ)-
Endosulfan II	33213-65-9	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro- 1,5,5a,6,9,9a-hexahydro-, 3-oxide, (3α,5aα,6β,9β,9aα)-
Endosulfan sulfate	1031-07-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro- 1,5,5a,6,9,9a-hexahydro-, 3,3-dioxide

Endrin	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-, (1aα, 2β,2aβ,3α,6α, 6aβ,7β,7aα)-
Endrin aldehyde	7421-93-4	1,2,4-Methenocyclopenta[cd]pentalene-5-carboxaldehyde, 2,2a,3,3,4,7-hexachlorodecahydro-, (1α,2β,2aβ,4β,4aβ,-5β,6aβ,6bβ,7R*)-
Ethylbenzene	100-41-4	Benzene, ethyl-
Ethyl methacrylate	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester
Ethyl methanesulfonate	62-50-0	Methanesulfonic acid, ethyl ester
Famphur	52-85-7	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl]-O,O-dimethyl ester
Fluoranthene	206-44-0	Fluoranthene
Fluorene	86-73-7	9H-Fluorene
Heptachlor	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-
Heptachlor epoxide	1024-57-3	2,5-Methano-2H-indeno[1,2-b]oxirene, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a,-hexahydro-,(1aα,1bβ, 2α,5α,5aβ,6β,6aα)
Hexachlorobenzene	118-74-1	Benzene, hexachloro-
Hexachlorobutadiene	87-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
Hexachlorocyclopentadiene	77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-
Hexachloroethane	67-72-1	Ethane, hexachloro-
Hexachlorophene	70-30-4	Phenol, 2,2'-methylenebis[3,4,6-trichloro-
Hexachloropropene	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-
2-Hexanone	591-78-6	2-Hexanone
Indeno(1,2,-3-cd)pyrene	193-39-5	Indeno[1,2,3-cd]pyrene
Isobutyl alcohol	78-83-1	1-Propanol, 2-methyl-
Isodrin	465-73-6	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a hexahydro-(1α,4α,4aβ,5β, 8β,8aβ)-
Isophorone	78-59-1	2-Cyclohexen-1-one, 3,5,5-trimethyl-
Isosafrole	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-
Kepone	143-50-0	1,3,4-Metheno-2H-cyclobuta-[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachloro-octahydro-

Lead	(Total)	Lead
Mercury	(Total)	Mercury
Methacrylonitrile	126-98-7	2-Propenenitrile, 2-methyl-
Methapyrilene	91-80-5	1,2,Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'- (2-thienylmethyl)-
Methoxychlor	72-43-5	Benzene, 1,1'-(2,2,2,trichloroethylidene)bis [4-methoxy-
Methyl bromide; Bromomethane	74-83-9	Methane, bromo-
Methyl chloride; Chloromethane	74-87-3	Methane, chloro-
3-Methylcholanthrene	56-49-5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
Methylene bromide; Dibromomethane	74-95-3	Methane, dibromo-
Methylene chloride; Dichloromethane	75-09-2	Methane, dichloro-
Methyl ethyl ketone; MEK	78-93-3	2-Butanone
Methyl iodide; Iodomethane	74-88-4	Methane, iodo-
Methyl methacrylate	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester
Methyl methanesulfonate	66-27-3	Methanesulfonic acid, methyl ester
2-Methylnaphthalene	91-57-6	Naphthalene, 2-methyl-
Methyl parathion; Parathion methyl	298-00-0	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester
4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	2-Pentanone, 4-methyl-
Naphthalene	91-20-3	Naphthalene
1,4-Naphthoquinone	130-15-4	1,4-Naphthalenedione
1-Naphthylamine	134-32-7	1-Naphthalenamine
2-Naphthylamine	91-59-8	2-Naphthalenamine
Nickel	(Total)	Nickel
o-Nitroaniline	88-74-4	Benzenamine, 2-nitro-
m-Nitroaniline	99-09-2	Benzenamine, 3-nitro-
p-Nitroaniline	100-01-6	Benzenamine, 4-nitro-
Nitrobenzene	98-95-3	Benzene, nitro-
o-Nitrophenol	88-75-5	Phenol, 2-nitro-
p-Nitrophenol	100-02-7	Phenol, 4-nitro-
4-Nitroquinoline-1-oxide	56-57-5	Quinoline, 4-nitro-, 1-oxide
N-Nitrosodi-n-butylamine	924-16-3	1-Butanamine, N-butyl-N-nitroso-
N-Nitrosodiethylamine	55-18-5	Ethanamine, N-ethyl-N-nitroso-

N-Nitrosodimethylamine	62-75-9	Methanamine, N-methyl-N-nitroso-
N-Nitrosodiphenylamine	86-30-6	Benzenamine, N-nitroso-N-phenyl-
N-Nitrosodipropylamine; Di-n-propyl-nitrosamine	621-64-7	1-Propanamine, N-nitroso-N-propyl-
N-Nitrosomethylethylamine	10595-95-6	Ethanamine, N-methyl-N-nitroso-
N-Nitrosomorpholine	59-89-2	Morpholine, 4-nitroso-
N-Nitrosopiperidine	100-75-4	Piperidine, 1-nitroso-
N-Nitrosopyrrolidine	930-55-2	Pyrrolidine, 1-nitroso-
5-Nitro-o-toluidine	99-55-8	Benzenamine, 2-methyl-5-nitro-
Parathion	56-38-2	Phosphorothioic acid, O,O-diethyl-O-(4-nitrophenyl) ester
Polychlorinated biphenyls; PCBs	See Note 4	1,1'-Biphenyl, chloro derivatives
Polychlorinated dibenzo-p-dioxins; PCDDs	See Note 5	Dibenzo[b,e][1,4]dioxin, chloro derivatives
Polychlorinated dibenzofurans; PCDFs	See Note 6	Dibenzofuran, chloro derivatives
Pentachlorobenzene	608-93-5	Benzene, pentachloro-
Pentachloroethane	76-01-7	Ethane, pentachloro-
Pentachloronitrobenzene	82-68-8	Benzene, pentachloronitro-
Pentachlorophenol	87-86-5	Phenol, pentachloro-
Phenacetin	62-44-2	Acetamide, N-(4-ethoxyphenyl)
Phenanthrene	85-01-8	Phenanthrene
Phenol	108-95-2	Phenol
p-Phenylenediamine	106-50-3	1,4-Benzenediamine
Phorate	298-02-2	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester
2-Picoline	109-06-8	Pyridine, 2-methyl-
Pronamide	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-
Propionitrile; Ethyl cyanide	107-12-0	Propanenitrile
Pyrene	129-00-0	Pyrene
Pyridine	110-86-1	Pyridine
Safrole	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-
Selenium	(Total)	Selenium
Silver	(Total)	Silver
Silvex; 2,4,5-TP	93-72-1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-
Styrene	100-42-5	Benzene, ethenyl-

Sulfide	18496-25-8	Sulfide
2,4,5-T; 2,4,5-Tri-chlorophenoxyacetic acid	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-
2,3,7,8-TCDD; 2,3,7,8-T-Tetrachlorodibenzo-p-dioxin	1746-01-6	Dibenzo[b,e][1,4]dioxin, 2,3,7,8-tetrachloro-
1,2,4,5-Tetrachlorobenzene	95-94-3	Benzene, 1,2,4,5-tetrachloro-
1,1,1,2-Tetrachloroethane	630-20-6	Ethane, 1,1,1,2-tetrachloro-
1,1,2,2-Tetrachloroethane	79-34-5	Ethane, 1,1,2,2-tetrachloro-
Tetrachloroethylene; Perchloroethylene; Tetrachloroethene	127-18-4	Ethene, tetrachloro-
2,3,4,6-Tetrachlorophenol	58-90-2	Phenol, 2,3,4,6-tetrachloro-
Tetraethyl dithiopyrophosphate; Sulfotepp	3689-24-5	Thiodiphosphoric acid ($[(HO)_2P(S)]_2O$), tetraethyl ester
Thallium	(Total)	Thallium
Tin	(Total)	Tin
Toluene	108-88-3	Benzene, methyl-
o-Toluidine	95-53-4	Benzenamine, 2-methyl-
Toxaphene	8001-35-2	Toxaphene
1,2,4-Trichlorobenzene	120-82-1	Benzene, 1,2,4-trichloro-
1,1,1-Trichloroethane; Methylchloroform	71-55-6	Ethane, 1,1,1-trichloro-
1,1,2-Trichloroethane	79-00-5	Ethane, 1,1,2-trichloro-
Trichloroethylene; Trichloroethene	79-01-6	Ethene, trichloro-
Trichlorofluoromethane	75-69-4	Methane, trichlorofluoro-
2,4,5-Trichlorophenol	95-95-4	Phenol, 2,4,5-trichloro-
2,4,6-Trichlorophenol	88-06-2	Phenol, 2,4,6-trichloro-
1,2,3-Trichloropropane	96-18-4	Propane, 1,2,3-trichloro-
O,O,O-Triethyl phosphorothioate	126-68-1	Phosphorothioic acid, O,O,O-triethyl ester
sym-Trinitrobenzene	99-35-4	Benzene, 1,3,5-trinitro-
Vanadium	(Total)	Vanadium
Vinyl acetate	108-05-4	Acetic acid, ethenyl ester
Vinyl chloride	75-01-4	Ethene, chloro-
Xylene (total)	1330-20-7	Benzene, dimethyl-
Zinc	(Total)	Zinc

FOOTNOTE: [1]Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.
FOOTNOTE: [2]Chemical Abstracts Service registry number. Where "Total" is entered, all species in the ground water that contain this element are included.

FOOTNOTE: [3]CAS index names are those used in the 9th Cumulative Index.
FOOTNOTE: [4]Polychlorinated biphenyls (CAS RN 1336-36-3); this category contains congener chemicals, including constituents of Aroclor-1016 (CAS RN 12674-11-2), Aroclor-1221 (CAS RN 11104-28-2), Aroclor-1232 (CAS RN 11141-16-5), Aroclor-1242 (CAS RN 53469-21-9), Aroclor-1248 (CAS RN 12672-29-6), Aroclor-1254 (CAS RN 11097-69-1), and Aroclor-1260 (CAS RN 11096-82-5).
FOOTNOTE: [5]This category contains congener chemicals, including tetrachlorodibenzo-p-dioxins (see also 2,3,7,8-TCDD), pentachlorodibenzo-p-dioxins, and hexachlorodibenzo-p-dioxins.
FOOTNOTE: [6]This category contains congener chemicals, including tetrachlorodibenzofurans, pentachlorodibenzofurans, and hexachlorodibenzofurans.

Authority: T.C.A. §§4-5-202 and 68-212-101 et seq.

1200-01-11-.07 Permitting Of Hazardous Waste Treatment, Storage, And Disposal Facilities

(1) General

(a) Purpose [40 CFR 270.1]

The purpose of this Rule is to establish the procedures, documentation, and other requirements which must be met in order for a person to be permitted to operate a hazardous waste treatment, storage, or disposal facility in Tennessee.

(b) Scope/Applicability [40 CFR 270.1]

1. The requirements of this Rule apply as specified to owners and operators of new and existing hazardous waste management facilities in Tennessee. Except as may be specifically provided otherwise in this Rule or in Rule 1200-01-11-.02:

(i) No new hazardous waste management facility in Tennessee can lawfully treat, store, or dispose of hazardous waste unless the owner or operator has a permit under the Act; and

(ii) No existing hazardous waste management facility in Tennessee can lawfully treat, store, or dispose of hazardous waste unless the owner and operator has a permit under the Act or interim status as provided in paragraph (3) of this Rule.

2. A permit is required for the treatment, storage, and disposal of any "hazardous waste" as identified or listed in Rule 1200-01-11-.02. The terms "treatment", "storage", "disposal" and “hazardous waste” are defined in Rule 1200-01-11-.01(2)(a). Owners and operators of hazardous waste management units must have permits during the active life (including the closure period) of the unit. Owners and operators of surface impoundments, landfills, land treatment units, and waste pile units that received wastes after July 26, l982, or that certified closure (according to Rule 1200-01-11-.05(7)(f)) after January 26, l983, must have post-closure permits, unless they demonstrate closure by removal or decontamination as provided under parts 7 and 8 of this subparagraph, or obtain an enforceable document in lieu of a post-closure permit, as provided under part 9 of this subparagraph. If a post-closure permit is required, the permit must address applicable Rule 1200-01-11-.06 Groundwater Monitoring, Unsaturated Zone Monitoring, Corrective Action, and Post-closure Care Requirements. The denial of a permit for the active life of a hazardous waste management facility or unit does not affect the requirement to obtain a post-closure permit under this paragraph.

3. Owners and operators of certain facilities require permits under the Act as well as permits under other environmental regulatory programs for certain aspects of the facility operation. Permits under the Act are required for:

(i) Injection wells that dispose of hazardous waste, and associated surface facilities that treat, store, or dispose of hazardous waste. However, the owner or operator with permits issued under the Tennessee Water Quality Control Act (T.C.A. §§69-3-101 et seq.), through Chapter 1200-4-6 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.), will be deemed to have a permit under the Act for the injection well itself if they comply with the requirements of subpart (c)1(ii) and part (c)2 of this paragraph (permit by rule for injection wells).

(ii) Off-site wastewater treatment units. However, the owner or operator of an off-site wastewater treatment unit that complies with the requirements of subpart (c)1(iii) of this paragraph will be deemed to have a permit under the Act (permit-by-rule for off-site wastewater treatment units).

(iii) Treatment, storage, or disposal of hazardous waste at facilities requiring a pollutant discharge permit under T.C.A. §§69-3-101 et seq. However, the owner or operator of a publicly owned treatment works receiving hazardous waste will be deemed to have a permit under the Act for that waste if they comply with the requirements of subpart (c)1(i) and part (c)2 of this paragraph (permit by rule for POTWs).

4. The following persons are among those who are not required to obtain a permit under the Act and this Rule:

(i) Generators who accumulate hazardous waste on-site for less than the time periods provided in Rule 1200-01-11-.03(4)(e), unless the generator is accumulating the waste in a unit otherwise subject to this Rule;

(ii) Persons who own or operate facilities solely for the treatment, storage, or disposal of hazardous waste excluded from regulation under this Rule by Rules 1200-01-11-.02(1)(d) and (e) (exclusions or small generator exemption);

(iii) Owners or operators of totally enclosed treatment facilities as defined in Rule 1200-01-11-.01(2)(a);

(iv) Owners or operators of one of the following units, as defined in Rule 1200-01-11-.01(2)(a):

(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(7).

(v) Transporters storing manifested shipments of hazardous waste in containers meeting applicable DOT and PSC packaging regulations at a transfer facility for a period of ten days or less;

(vi) Persons adding absorbent material to waste in a container (as defined in Rule 1200-01-11-.01(2)(a)) and persons adding waste to absorbent material in a container, provided that these actions occur at the time waste is first placed in the container and Rule 1200-01-11-.06(2)(h)2 and Rule 1200-01-11-.06(9)(b) and (c) are complied with;

(vii) Owners and operators of facilities which treat or store hazardous waste that is to be recycled, except to the extent the requirements of this Rule are referred to in Rule 1200-01-11-.02(1)(f) and Rule 1200-01-11-.09;

(viii) Farmers who dispose of hazardous waste pesticides from their own use as provided in Rule 1200-01-11-.02(1)(d)2(ii)(II);

(ix) Universal waste handlers and universal waste transporters (as defined in Rule 1200-01-11-.01(2)(a)) managing the wastes listed in Rule 1200-01-11-.12(1)(a). These handlers are subject to regulation under Rule 1200-01-11-.12.

5. (i) A person is not required to obtain a permit under the Act for treatment or containment activities taken 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; or

(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(2)(a).

(ii) Any person 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 for those activities.

(iii) In the case of emergency responses 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.

6. The Commissioner may issue or deny a permit for one or more units at a facility without simultaneously issuing or denying a permit to all of the units at the facility. The interim status of any unit for which a permit has not been issued or denied is not affected by the issuance or denial of a permit to any other unit at the facility.

7. Owners/operators of surface impoundments, land treatment units, and waste piles closing by removal or decontamination standards under Rule 1200-01-11-.05(7)(b) must obtain a post-closure permit unless they can demonstrate to the Commissioner that the closure meets the standards for closure by removal or decontamination in Rule 1200-01-11-.06(11)(i), (12)(i) or (13)(k)5 respectively. The demonstration may be made in the following ways:

(i) If the owner/operator has submitted a Part B application for a post-closure permit, the owner/operator may request a determination, based on information contained in the application, that closure by Rule 1200-01-11-.06 removal standards were met. If the Commissioner believes that Rule 1200-01-11-.06 standards were met, he/she will notify the public of this proposed decision, allow for public comment, and reach a final determination according to the procedures in part 8 of this subparagraph.

(ii) If the owner/operator has not submitted a Part B application for a post-closure permit, the owner/operator may petition the Commissioner for a determination that a post-closure permit is not required because the closure met the applicable Rule 1200-01-11-.06 closure standards.

(I) The petition must include data demonstrating that closure by removal or decontamination standards were met, or it must demonstrate that the unit closed met or exceeded the applicable Rule 1200-01-11-.06 closure-by-removal standards.

(II) The Commissioner shall approve or deny the petition according to the procedures outlined in part 8 of this subparagraph.

8. (i) If a facility owner/operator seeks an equivalency demonstration under part 7 of this subparagraph, the Commissioner will provide the public, through a newspaper notice, published by the owner or operator, as provided for in Rule 1200-01-11-.07(7)(e) and as prepared and required by the Commissioner, the opportunity to submit written comments on the information submitted by the owner/operator within 30 days from the date of the notice. The Commissioner will also, in response to a request or at his/her own discretion, hold a public hearing whenever such a hearing might clarify one or more issues concerning the equivalence of the Rule 1200-01-11-.05 closure to a Rule 1200-01-11-.06 closure. The Commissioner will give public notice, published by the owner or operator, as provided for in Rule 1200-01-11-.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.

(ii) The Commissioner will determine whether the Rule 1200-01-11-.05 closure met Rule 1200-01-11-.06 closure by removal or decontamination requirements within 90 days of its receipt. If the Commissioner finds that the closure did not meet the applicable Rule 1200-01-11-.06 standards, he/she will provide the owner/operator with a written statement of the reasons why the closure failed to meet Rule 1200-01-11-.06 standards. The owner/operator may submit additional information in support of an equivalency demonstration within 30 days after receiving such written statement. The Commissioner will review any additional information submitted and make a final determination within 60 days.

(iii) If the Commissioner determines that the facility did not close in accordance with Rule 1200-01-11-.06 closure-by-removal standards, the facility is subject to post-closure permitting requirements.

9. Enforceable documents for post-closure care. At the discretion of the Commissioner, an owner or operator may obtain, in lieu of a post-closure permit, an enforceable document imposing the requirements of Rule 1200-01-11-.05(7)(l). “Enforceable document” means an order, a plan, or other document issued by EPA or by the Commissioner including, but not limited to a corrective action order, a remedial action order, or a closure or post-closure plan.

(Note: As provided in Rule 1200-01-11-.08(1)(d), no permit or other authorization shall be issued or renewed by the

Division of Solid Waste Management pursuant to Rule Chapter 1200-01-11 or 1200-1-14 until all fees and/or penalties owed by the applicant to the Division are paid in full, unless a time schedule for payments has been approved and all payments are current or contested fees or penalties are under appeal.)

(c) Permits-By-Rule [40 CFR 270.60]

1. Notwithstanding any other provision of this Rule, the following shall be deemed to have a permit under the Act if the conditions listed are met:

(i) The owner or operator of a POTW which accepts for treatment hazardous waste:

(I) If the owner or operator has a permit under T.C.A. §§69-3-101 et seq.;

(II) If the owner or operator complies with the conditions of that permit;

(III) If the owner or operator complies with the notification requirement of part 2 of this subparagraph;

(IV) If the owner or operator complies with the following regulations:

I. Rule 1200-01-11-.06(5)(b) (Use of Manifest System);

II. Rule 1200-01-11-.06(5)(c) (Manifest Discrepancies);

III. Rule 1200-01-11-.06(5)(d)1 and 2(i) (Operating Record);

IV. Rule 1200-01-11-.06(5)(f) (Annual Report); and

V. Rule 1200-01-11-.06(5)(g) (Unmanifested Waste Report);

VI. Rule 1200-01-11-.06(6)(l) (Corrective Action for Solid Waste Management Units) for NPDES permits issued after November 8, 1984; and

(V) If the waste meets all Federal, State, and local pretreatment requirements which would be applicable to the waste if it were being discharged into the POTW through a sewer, pipe, or similar conveyance.

(ii) The owner or operator of an injection well disposing of hazardous wastes, if the owner or operator:

(I) Has permits for underground injection issued under the Tennessee Water Quality Control Act (T.C.A. §§69-3-101 et seq.), through Chapter 1200-4-6 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.).

(II) Complies with the conditions of those permits and the following requirements:

I. Rule 1200-01-11-.06(5)(b) (Use of Manifest System);

II. Rule 1200-01-11-.06(5)(c) (Manifest Discrepancies);

III. Rule 1200-01-11-.06(5)(d)1 and 2(i) (Operating Record);

IV. Rule 1200-01-11-.06(5)(f) (Annual Report);

V. Rule 1200-01-11-.06(5)(g) (Unmanifested Waste Report);

VI. Rule 1200-01-11-.06(2)(g) (Personnel Training);

VII. Submitted to the Commissioner, when abandonment is completed, of certification by the owner or operator and certification by an independent registered professional engineer that the facility has been closed in accordance with the plugging and abandonment plan approved as part of his underground injection permit; and

VIII. Rule 1200-01-11-.06(6)(l) (Corrective Action for Solid Waste Management Units) for NPDES permits issued after November 8, 1984.

(III) For Underground Injection Control (UIC) permits issued after November 8, l984:

I. Complies with Rule 1200-01-11-.06(6)(l);and

II. Where the UIC well is the only unit at a facility which requires a permit, complies with subparagraph (5)(e) of this Rule.

(iii) The owner or operator of an off-site wastewater treatment unit (as defined in Rule 1200-01-11-.01(2)(a)) provided that the only wastes received by the unit from off-site are from facilities owned or operated by the same manufacturing corporation or subsidiaries of such corporation or from product distribution facilities operating under contract to that manufacturing corporation or subsidiaries, if the owner or operator:

(I) Complies with the notification requirement of part 2 of this subparagraph;

(II) Meets all appropriate standards of Tennessee Rule Chapters 1200-4-1 through 1200-4-5 that are in effect on the effective date of this rulemaking;

(III) Complies with the following requirements relative to hazardous wastes received from off-site locations:

I. Rule 1200-01-11-.06(5)(b) (Use of Manifest System);

II. Rule 1200-01-11-.06(5)(c) (Manifest Discrepancies);

III. Rule 1200-01-11-.06(5)(f) (Annual Report); and

IV. Rule 1200-01-11-.06(5)(g) (Unmanifested Waste Report); and

(IV) Complies with the requirements set out in part (2)(h)2 of Rule 1200-01-11-.06 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(3)(a), Table: Treatment Standards for Hazardous Wastes), or reactive (D003) waste, to remove the characteristic before land disposal.

(iv) The owner or operator of a "controlled crusher system" used explicitly for the crushing of universal waste lamps listed in Rule 1200-01-11-.12(1)(a) to achieve volume reduction, if the owner or operator:

(I) Complies with the notification requirement of part 2 of this subparagraph;

(II) Complies with the following:

I. The lamps must be crushed in a system designed and operated to minimize the loss of mercury or other hazardous constitutents to the atmosphere. Any air exhausted from the unit shall pass through a well-maintained high efficiency particulate air filter (HEPA) designed to minimize such loss. Detailed records regarding this operation must be kept and made available for review for at least three (3) years, including, but not limited to, the technology employed for crushing, including any certification or testing data provided by the manufacturer of the crushing unit;

II. The handler immediately transfers any material recovered from a spill or leak to a container that meets the requirements of Rule 1200-01-11-.03(4)(e), and has available equipment necessary to comply with this requirement;

III. The handler ensures that the area in which the lamps are crushed is well-ventilated and monitored to ensure compliance with applicable Occupational Safety and Health Administration (OSHA) exposure levels for mercury;

IV. The handler ensures that employees crushing lamps are thoroughly familiar with proper waste mercury or other hazardous constituents handling and emergency procedures, including transfer of mercury from containment devices to appropriate containers; and

V. The crushed lamps are stored in closed, non-leaking containers that are in good condition (e.g., no severe rusting, apparent structural defects or deterioration), suitable to prevent releases during storage, handling and transportation; and

(III) Complies with all other applicable aspects of Rule 1200-01-11-.12, including, but not limited to, the provisions of paragraph (8).

Note: A small or large quantity handler who crushes his own lamps on site may operate without a Permit-by-Rule pursuant to Rule 1200-01-11-.12(2)(d)4(ii) or (3)(d)4(ii), respectively.

2. An owner or operator of a facility or universal waste "crusher" subject to a permit-by-rule under part 1 of this subparagraph must notify the Department in accordance with the requirements of this part.

(i) For existing facilities or crushers, notification must be filed within 90 days of the date the facility or process becomes subject to these Rules. For new facilities or processes, notification must be filed at least 30 days before the management of hazardous waste is to commence.

(ii) Notification must be filed only on notification forms obtained from the Department.

(iii) The notification shall include, but not necessarily be limited to, the following information about the facility or process:

(I) The organization/facility name and mailing address;

(II) The site location (county, city, street address);

(III) The Installation Identification Number assigned to the facility or process by EPA or the Department; or, if no EPA Installation Identification Number has been assigned, one of the following:

I. If known, the facility's Dunn and Bradstreet Universal Numbering System (DUNS) identification number, or

II. For a federal facility, its General Services Administration (GSA) Real Property Number;

(IV) The name, title, and telephone number of the facility or process operator or other responsible individual at the facility who could be contacted for clarification of information submitted;

(V) A description of hazardous waste or product handled, by listing or other identification based on the wastes hazardous characteristics (Rules 1200-01-11-.02);

(VI) An estimate of the quantity of each such waste handled in a year;

(VII) A brief description of hazardous waste storage and treatment methods utilized; and

(VIII) A certification, to be signed and dated by the facility or process operator or his authorized representative.

3. Upon being notified as per part 2 of this subparagraph, the Commissioner shall issue an Installation Identification Number to the facility or process; such number to be included on all manifests, all reports and official documents, and any other correspondence between the facility or process and the Department.

(d) Emergency Permits [40 CFR 270.61]

1. Notwithstanding any other provision of this Rule, in the event the Commissioner finds an imminent and substantial endangerment to human health or the environment the Commissioner may issue a temporary emergency permit:

(i) To a non-permitted facility to allow treatment, storage, or disposal of hazardous waste; or

(ii) To a permitted facility to allow treatment, storage, or disposal of a hazardous waste not covered by an effective permit.

2. This emergency permit:

(i) May be oral or written. If oral, it shall be followed in five days by a written emergency permit;

(ii) Shall not exceed 90 days in duration;

(iii) Shall clearly specify the hazardous wastes to be received, and the manner and location of their treatment, storage, or disposal;

(iv) May be terminated by the Commissioner at any time without process if he or she determines that termination is appropriate to protect human health and the environment;

(v) Shall be accompanied by a public notice which is published by the owner or operator, as provided for in Rule 1200-01-11-.07(7)(e) and as prepared and required by the Commissioner, in a daily or weekly local newspaper of general circulation. (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 public notice shall include the following information:

(I) Name and address of the office granting the emergency authorization;

(II) Name and location of the permitted HWM facility;

(III) A brief description of the wastes involved;

(IV) A brief description of the action authorized and reasons for authorizing it; and

(V) Duration of the emergency permit; and

(vi) Shall incorporate, to the extent possible and not inconsistent with the emergency situation, all applicable requirements of this Rule and Rules 1200-01-11-.06 and .09.

(e) Hazardous Waste Incinerator Permits [40 CFR 270.62]

When an owner or operator of a hazardous waste incineration unit becomes subject to RCRA permit requirements after October 12, 2005, or when an owner or operator of an existing hazardous waste incineration unit demonstrates compliance with the air emission standards and limitations in 40 CFR 63 Subpart EEE (i.e., by conducting a

comprehensive performance test and submitting a Notification of Compliance under 40 CFR 63.1207(j) and 63.1210(d) documenting compliance with all applicable requirements of 40 CFR 63 Subpart EEE), the requirements of this part do not apply, except those provisions the Commissioner determines are necessary to ensure compliance with parts (15)(f)1 and 3 of Rule 1200-01-11-.06 if you elect to comply with subpart (12)(a)1(i)(I) of this Rule to minimize emissions of toxic compounds from startup, shutdown, and malfunction events. Nevertheless, the Commissioner may apply the provisions of this part, on a case-by-case basis, for purposes of information collection in accordance with subparagraphs (2)(g) and (2)(h) and subparts (8)(b)2(ii) and (8)(b)2(iii) of this Rule.

1. For the purposes of determining operational readiness following completion of physical construction, the Commissioner must establish permit conditions, including but not limited to allowable waste feeds and operating conditions, in the permit to a new hazardous waste incinerator. These permit conditions will be effective for the minimum time required to bring the incinerator to a point of operational readiness to conduct a trial burn, not to exceed 720 hours operating time for treatment of hazardous waste. The Commissioner may extend the duration of this operational period once, for up to 720 additional hours, at the request of the applicant when good cause is shown. The permit may be modified to reflect the extension according to part (9)(c)5 of this Rule.

    (i) Applicants must submit a statement, with Part B of the permit application, which suggests the conditions necessary to operate in compliance with the performance standards of Rule 1200-01-11-.06(15)(d) during this period. This statement should include, at a minimum, restrictions on waste constituents, waste feed rates and the operating parameters identified in Rule 1200-01-11-.06(15)(f).

    (ii) The Commissioner will review this statement and any other relevant information submitted with Part B of the permit application and specify requirements for this period sufficient to meet the performance standards of Rule 1200-01-11-.06(15)(d) based on his engineering judgment.

2. For the purposes of determining feasibility of compliance with the performance standards of Rule 1200-01-11-.06(15)(d) and of determining adequate operating conditions under Rule 1200-01-11-.06(15)(f), the Commissioner must establish conditions in the permit for a new hazardous waste incinerator to be effective during the trial burn.

    (i) Applicants must propose a trial burn plan, prepared under subpart (e)2(ii) of this Rule with a Part B of the permit application.

    (ii) The trial burn plan must include the following information:

        (I) An analysis of each waste or mixture of wastes to be burned which includes:

            I. Heat value of the waste in the form and composition in which it will be burned.

            II. Viscosity (if applicable), or description of the physical form of the waste.

            III. An identification of any hazardous organic constituents listed in Appendix VIII of Rule 1200-01-11-.02, which are present in the waste to be burned, except that the

applicant need not analyze for constituents listed in Appendix VIII of Rule 1200-01-11-.02 which would reasonably not be expected to be found in the waste. The constituents excluded from analysis must be identified, and the basis for the exclusion stated. The waste analysis must rely on appropriate analytical techniques.

IV. An approximate quantification of the hazardous constituents identified in the waste, within the precision produced by appropriate analytical methods.

(II) A detailed engineering description of the incinerator for which the permit is sought including:

I. Manufacturer's name and model number of incinerator (if available).

II. Type of incinerator.

III. Linear dimensions of the incinerator unit including the cross sectional area of combustion chamber.

IV. Description of the auxiliary fuel system (type/feed).

V. Capacity of prime mover.

VI. Description of automatic waste feed cut-off system(s).

VII. Stack gas monitoring and pollution control equipment.

VIII. Nozzle and burner design.

IX. Construction materials.

X. Location and description of temperature, pressure, and flow indicating and control devices.

(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) A detailed test schedule for each waste for which the trial burn is planned including date(s), duration, quantity of waste to be burned, and other factors relevant to the Commissioner's decision under subpart (e)2(v) of this Rule.

(V) A detailed test protocol, including, for each waste identified, the ranges of temperature, waste feed rate, combustion gas velocity, use of auxiliary fuel, and any other relevant parameters that will be varied to affect the destruction and removal efficiency of the incinerator.

(VI) A description of, and planned operating conditions for, any emission control equipment which will be used.

(VII) Procedures for rapidly stopping waste feed, shutting down the incinerator, and controlling emissions in the event of an equipment malfunction.

(VIII) Such other information as the Commissioner reasonably finds necessary to determine whether to approve the trial burn plan in light of the purposes of this paragraph and the criteria in subpart (e)2(v) of this Rule.

(iii) The Commissioner, in reviewing the trial burn plan, shall evaluate the sufficiency of the information provided and may require the applicant to supplement this information, if necessary, to achieve the purposes of this paragraph.

(iv) Based on the waste analysis data in the trial burn plan, the Commissioner will specify as trial Principal Organic Hazardous Constituents (POHCs), those constituents for which destruction and removal efficiencies must be calculated during the trial burn. These trial POHCs will be specified by the Commissioner based on his estimate of the difficulty of incineration of the constituents identified in the waste analysis, their concentration or mass in the waste feed, and, for wastes listed in Rule 1200-01-11-.02(4), the hazardous waste organic constituent or constituents identified in Appendix VII of that Rule as the basis for listing.

(v) The Commissioner shall approve a trial burn plan if he finds that:

(I) The trial burn is likely to determine whether the incinerator performance standard required by Rule 1200-01-11-.06(15)(d) can be met;

(II) The trial burn itself will not present an imminent hazard to human health or the environment;

(III) The trial burn will help the Commissioner to determine operating requirements to be specified under Rule 1200-01-11-.06(15)(f); and

(IV) The information sought in items (e)2(v)(I) and (II) of this Rule cannot reasonably be developed through other means.

(vi) The Commissioner must send a notice to all persons on the facility mailing list as set forth in item (7)(e)3(i)(V) of this Rule and to the appropriate units of State and local government as set forth in item (7)(e)3(i)(VI) of this Rule announcing the scheduled commencement and completion dates for the trial burn. The applicant may not commence the trial burn until after the Commissioner has issued such notice.

(I) This notice must be mailed within a reasonable time period before the scheduled trial burn. An additional notice is not required if the trial burn is delayed due to circumstances beyond the control of the facility or the permitting agency.

(II) This notice must contain:

I. The name and telephone number of the applicant's contact person;

II. The name and telephone number of the permitting agency's contact office;

III. The location where the approved trial burn plan and any supporting documents can be reviewed and copied; and

IV. An expected time period for commencement and completion of the trial burn.

(vii) During each approved trial burn (or as soon after the burn as is practicable), the applicant must make the following determinations:

(I) A quantitative analysis of the trial POHCs in the waste feed to the incinerator.

(II) A quantitative analysis of the exhaust gas for the concentration and mass emissions of the trial POHCs, oxygen (O_2) and hydrogen chloride (HCl).

(III) A quantitative analysis of the scrubber water (if any), ash residues, and other residues, for the purpose of estimating the fate of the trial POHCs.

(IV) A computation of destruction and removal efficiency (DRE), in accordance with the DRE formula specified in Rule 1200-01-11-.06(15)(d)1.

(V) If the HCl emission rate exceeds 1.8 kilograms of HCl per hour (4 pounds per hour), a computation of HCl removal efficiency in accordance with Rule 1200-01-11-.06(15)(d)2.

(VI) A computation of particulate emissions, in accordance with Rule 1200-01-11-.06(15)(d)3.

(VII) An identification of sources of fugitive emissions and their means of control.

(VIII) A measurement of average, maximum, and minimum temperatures and combustion gas velocity.

(IX) A continuous measurement of carbon monoxide (CO) in the exhaust gas.

(X) Such other information as the Commissioner may specify as necessary to ensure that the trial burn will determine compliance with the performance standards in Rule 1200-01-11-.06(15)(d) and to establish the operating conditions required by Rule 1200-01-11-.06(15)(f) as necessary to meet that performance standard.

(viii) The applicant must submit to the Commissioner a certification that the trial burn has been carried out in accordance with the approved trial burn plan, and must submit the results of all the determinations required in

subpart (e)2(vi) of this Rule. This submission shall be made within 90 days of completion of the trial burn, or later if approved by the Commissioner.

(ix) All data collected during any trial burn must be submitted to the Commissioner following the completion of the trial burn.

(x) All submissions required by this part must be certified on behalf of the applicant by the signature of a person authorized to sign a permit application or a report under subparagraph (2)(a) of this Rule.

(xi) Based on the results of the trial burn, the Commissioner shall set the operating requirements in the final permit according to Rule 1200-01-11-.06(15)(f). The permit modification shall proceed according to part (9)(c)5 of this Rule.

3. For the purposes of allowing operation of a new hazardous waste incinerator following completion of the trial burn and prior to final modification of the permit conditions to reflect the trial burn results, the Commissioner may establish permit conditions, including but not limited to allowable waste feeds and operating conditions sufficient to meet the requirements of Rule 1200-01-11-.06(15)(f), in the permit to a new hazardous waste incinerator. These permit conditions will be effective for the minimum time required to complete sample analysis, data computation and submission of the trial burn results by the applicant, and modification of the facility permit by the Commissioner.

(i) Applicants must submit a statement, with Part B of the permit application, which identifies the conditions necessary to operate in compliance with the performance standards of Rule 1200-01-11-.06(15)(d), during this period. This statement should include, at a minimum, restrictions on waste constituents, waste feed rates, and the operating parameters in Rule 1200-01-11-.06(15)(f).

(ii) The Commissioner will review this statement and any other relevant information submitted with Part B of the permit application and specify those requirements for this period most likely to meet the performance standards of Rule 1200-01-11-.06(15)(d) based on his engineering judgment.

4. For the purpose of determining feasibility of compliance with the performance standards of Rule 1200-01-11-.06(15)(d) and of determining adequate operating conditions under Rule 1200-01-11-.06(15)(f), the applicant for a permit for an existing hazardous waste incinerator must prepare and submit a trial burn plan and perform a trial burn in accordance with subpart (5)(b)5(ii) of this Rule and subparts 2(ii) through 2(v) and 2(vii)-2(x) of this subparagraph or, instead, submit other information as specified in subpart (5)(b)5(iii) of this Rule. The Commissioner must announce his or her intention to approve the trial burn plan in accordance with the timing and distribution requirements of subpart 2(vi) of this subparagraph. The contents of the notice must include: the name and telephone number of a contact person at the facility; the name and telephone number of a contact office at the permitting agency; the location where the trial burn plan and any supporting documents can be reviewed and copied; and a schedule of the activities that are required prior to permit issuance, including the anticipated time schedule for agency approval of the plan and the time period during which the trial burn would be conducted. Applicants submitting information under subpart (5)(b)5(i) of this Rule are exempt from compliance with Rules

1200-01-11-.06(15)(d) and (f) and, therefore, are exempt from the requirement to conduct a trial burn. Applicants who submit trial burn plans and receive approval before submission of a permit application must complete the trial burn and submit the results, specified in subpart 2(vii) of this subparagraph, with Part B of the permit application. If completion of this process conflicts with the date set for submission of the Part B application, the applicant must contact the Commissioner to establish a later date for submission of the Part B application or the trial burn results. Trial burn results must be submitted prior to issuance of the permit. When the applicant submits a trial burn plan with Part B of the permit application, the Commissioner will specify a time period prior to permit issuance in which the trial burn must be conducted and the results submitted.

(f) Permits for Land Treatment Demonstrations Using Field Test or Laboratory Analyses [40 CFR 270.63]

1. For the purpose of allowing an owner or operator to meet the treatment demonstration requirements of Rule 1200-01-11-.06(13)(c), the Commissioner may issue a treatment demonstration permit. The permit must contain only those requirements necessary to meet the standards in Rule 1200-01-11-.06(13)(c)3. The permit may be issued either as a treatment or disposal permit covering only the field test or laboratory analyses, or as a two-phase facility permit covering the field tests, or laboratory analyses, and design, construction operation and maintenance of the land treatment unit.

   (i) The Commissioner may issue a two-phase facility permit if he finds that, based on information submitted in Part B of the application, substantial, although incomplete or inconclusive, information already exists upon which to base the issuance of a facility permit.

   (ii) If the Commissioner finds that not enough information exists upon which he can establish permit conditions to attempt to provide for compliance with all of the requirements of paragraph (13) of Rule 1200-01-11-.06, he must issue a treatment demonstration permit covering only the field test or laboratory analyses.

2. If the Commissioner finds that a phased permit may be issued, he will establish, as requirements in the first phase of the facility permit, conditions for conducting the field tests or laboratory analyses. These permit conditions will include design and operating parameters (including the duration of the tests or analyses and, in the case of field tests, the horizontal and vertical dimensions of the treatment zone), monitoring procedures, post-demonstration clean-up activities, and any other conditions which the Commissioner finds may be necessary under Rule 1200-01-11-.06(13)(c)3. The Commissioner will include conditions in the second phase of the facility permit to attempt to meet all requirements of paragraph (13) of Rule 1200-01-11-.06 pertaining to unit design, construction, operation, and maintenance. The Commissioner will establish these conditions in the second phase of the permit based upon the substantial but incomplete or inconclusive information contained in the Part B application.

   (i) The first phase of the permit will be effective as provided in part (7)(i)2 of this Rule.

   (ii) The second phase of the permit will be effective as provided in part 4 of this subparagraph.

3. When the owner or operator who has been issued a two-phase permit has completed the treatment demonstration, he must submit to the Commissioner a certification, signed by a person authorized to sign a permit application or report under parts (2)(a)7 and 8 of this Rule, that the field tests or laboratory analyses have been carried out in accordance with the conditions specified in phase one of the permit for conducting such tests or analyses. The owner or operator must also submit all data collected during the field tests or laboratory analyses within 90 days of completion of those tests or analyses unless the Commissioner approves a later date.

4. If the Commissioner determines that the results of the field tests or laboratory analyses meet the requirements of Rule 1200-01-11-.06(13)(c), he will modify the second phase of the permit to incorporate any requirements necessary for operation of the facility in compliance with Rule 1200-01-11-.06(13), based upon the results of the field tests or laboratory analyses.

   (i) This permit modification may proceed under part (9)(c)5 of this Rule, or otherwise will proceed as a modification under subpart (9)(c)3(ii) of this Rule. If such modifications are necessary, the second phase of the permit will become effective only after those modifications have been made.

   (ii) If no modifications of the second phase of the permit are necessary, the Commissioner will give notice of his final decision to the permit applicant and to each person who submitted written comments on the phased permit or who requested notice of the final decision on the second phase of the permit. The second phase of the permit then will become effective as specified in part (7)(i)2 of this Rule.

(g) Research, Development, and Demonstration Permits [40 CFR 270.65]

1. The Commissioner may issue a research, development, and demonstration permit for any hazardous waste treatment facility which proposes to utilize an innovative and experimental hazardous waste treatment technology or process for which permit standards for such experimental activity have not been promulgated under Rule 1200-01-11-.06 or .09. Any such permit shall include such terms and conditions as will assure protection of human health and the environment. Such permits:

   (i) Shall provide for the construction of such facilities as necessary, and for operation of the facility for not longer than one year unless renewed as provided in part (g)4 of this paragraph, and

   (ii) Shall provide for the receipt and treatment by the facility of only those types and quantities of hazardous waste which the Commissioner deems necessary for purposes of determining the efficacy and performance capabilities of the technology or process and the effects of such technology or process on human health and the environment, and

   (iii) Shall include such requirements as the Commissioner deems necessary to protect human health and the environment (including, but not limited to, requirements regarding monitoring, operation, financial responsibility, closure, and remedial action), and such requirements as the Commissioner deems necessary regarding testing and providing of information to the Commissioner with respect to the operation of the facility.

2. For the purpose of expediting review and issuance of permits under this section, the Commissioner may, consistent with the protection of human health and the environment, modify or waive permit application and permit issuance requirements in this Rule except that there may be no modification or waiver of regulations regarding financial responsibility (including insurance) or of procedures regarding public participation.

3. The Commissioner may order an immediate termination of all operations at the facility at any time he determines that termination is necessary to protect human health and the environment.

4. Any permit issued under this section may be renewed not more than three times. Each such renewal shall be for a period of not more than 1 year.

(h) Confidentiality of Information

Permit application information which meets the definition of proprietary information set forth in Rule 1200-01-11-.01(7) shall be subject to the confidential handling provided in that paragraph. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, the Commissioner may make the information available to the public without further notice. However, such proprietary information shall not include the name and address of permit applicants or permittees.

(i) Project Supervision

A registered engineer must plan, design, and inspect the construction of any hazardous waste treatment, storage, or disposal works; also, a registered engineer must assist in the start-up of, and outline correct operating procedures for, any new or altered facility. Any registered engineer herein required shall be governed by the terms of T.C.A. Title 62, Chapter 2.

(j) Permits for Boilers and Industrial Furnaces Burning Hazardous Waste [40 CFR 270.66]

When an owner or operator of a cement kiln , lightweight aggregate kiln, solid fuel boiler, liquid fuel boiler, or hydrochloric acid production furnace becomes subject to RCRA permit requirements after October 12, 2005 or when an owner or operator of an existing cement kiln, lightweight aggregate kiln, solid fuel boiler, liquid fuel boiler, or hydrochloric acid production furnace demonstrates compliance with the air emission standards and limitations in 40 CFR 63 Subpart EEE (i.e., by conducting a comprehensive performance test and submitting a Notification of Compliance under 40 CFR 63.1207(j) and 63.1210(d) documenting compliance with all applicable requirements of 40 CFR 63 Subpart EEE), the requirements of this part do not apply. The requirements of this part do apply, however, if the Commissioner determines certain provisions are necessary to ensure compliance with subpart (8)(c)5(i) and item (8)(c)5(ii)(III) of Rule 1200-01-11-.09 if you elect to comply with subpart (12)(a)1(i) of this Rule to minimize emissions of toxic compounds from startup, shutdown, and malfunction events; or if you are an area source and elect to comply with subparagraphs (8)(f), (8)(g), and (8)(h) of Rule 1200-01-11-.09 standards and associated requirements for particulate matter, hydrogen chloride and chlorine gas, and non-mercury metals; or the Commissioner determines certain provisions apply, on a case-by-case basis, for purposes of information collection in accordance with subparagraphs (2)(g) and (2)(h) and subparts (8)(b)2(ii) and (8)(b)2(iii) of this Rule.

1. General

Owners and operators of new boilers and industrial furnaces (those not operating under the interim status standards of Rule 1200-01-11-.09(8)(d)) are subject to parts 2 through 6 of this subparagraph. Boilers and industrial furnaces operating under the interim status standards of Rule 1200-01-11-.09(8)(d) are subject to part 7 of this subparagraph.

2. Permit Operating Periods for New Boilers and Industrial Furnaces

A permit for a new boiler or industrial furnace shall specify appropriate conditions for the following operating periods:

(i) Pretrial Burn Period

For the period beginning with initial introduction of hazardous waste and ending with initiation of the trial burn, and only for the minimum time required to bring the boiler or industrial furnace to a point of operational readiness to conduct a trial burn, not to exceed 720 hours operating time when burning hazardous waste, the Commissioner must establish in the Pretrial Burn Period of the permit conditions, including but not limited to, allowable hazardous waste feed rates and operating conditions. The Commissioner may extend the duration of this operational period once, for up to 720 additional hours, at the request of the applicant when good cause is shown. The permit may be modified to reflect the extension according to part (9)(c)5 of this Rule.

(I) Applicants must submit a statement, with part B of the permit application, that suggests the conditions necessary to operate in compliance with the standards of Rules 1200-01-11-.09(8)(e) through (h) during this period. This statement should include, at a minimum, restrictions on the applicable operating requirements identified in Rule 1200-01-11-.09(8)(c)5.

(II) The Commissioner will review this statement and any other relevant information submitted with part B of the permit application and specify requirements for this period sufficient to meet the performance standards of Rules 1200-01-11-.09(8)(e) through (h) based on his/her engineering judgment.

(ii) Trial Burn Period

For the duration of the trial burn, the Commissioner must establish conditions in the permit for the purposes of determining feasibility of compliance with the performance standards of Rules 1200-01-11-.09(8)(e) through (h) and determining adequate operating conditions under Rule 1200-01-11-.09(8)(c)5. Applicants must propose a trial burn plan, prepared under part 3 of this subparagraph, to be submitted with part B of the permit application.

(iii) Post-trial Burn Period

(I) For the period immediately following completion of the trial burn, and only for the minimum period sufficient to allow sample analysis, data computation, and submission of the trial burn

results by the applicant, and review of the trial burn results and modification of the facility permit by the Commissioner to reflect the trial burn results, the Director will establish the operating requirements most likely to ensure compliance with the performance standards of Rules 1200-01-11-.09(8)(e) through (h) based on his engineering judgment.

(II) Applicants must submit a statement, with part B of the application, that identifies the conditions necessary to operate during this period in compliance with the performance standards of Rules 1200-01-11-.09(8)(e) through (h). This statement should include, at a minimum, restrictions on the operating requirements provided by Rule 1200-01-11-.09(8)(c)5.

(III) The Commissioner will review this statement and any other relevant information submitted with part B of the permit application and specify requirements for this period sufficient to meet the performance standards of Rules 1200-01-11-.09(8)(e) through (h) based on his/her engineering judgment.

(iv) Final Permit Period

For the final period of operation, the Commissioner will develop operating requirements in conformance with Rules 1200-01-11-.09(8)(c)5 that reflect conditions in the trial burn plan and are likely to ensure compliance with the performance standards of Rules 1200-01-11-.09(8)(e) through (h). Based on the trial burn results, the Commissioner shall make any necessary modifications to the operating requirements to ensure compliance with the performance standards. The permit modification shall proceed according to part (9)(c)5 of this Rule.

3. Requirements for Trial Burn Plans

The trial burn plan must include the following information. The Commissioner, in reviewing the trial burn plan, shall evaluate the sufficiency of the information provided and may require the applicant to supplement this information, if necessary, to achieve the purposes of this paragraph:

(i) An analysis of each feed stream, including hazardous waste, other fuels, and industrial furnace feed stocks, as fired, that includes:

(I) Heating value, levels of antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, thallium, total chlorine/chloride, and ash;

(II) Viscosity or description of the physical form of the feed stream;

(ii) An analysis of each hazardous waste, as fired, including:

(I) An identification of any hazardous organic constituents listed in Appendix VIII, of Rule 1200-01-11-.02 that are present in the feed stream, except that the applicant need not analyze for constituents listed in appendix VIII that would reasonably not be expected to be found in the hazardous waste. The constituents excluded from analysis must be identified and the basis for this

exclusion explained. The waste analysis must be conducted in accordance with appropriate analytical techniques.

(II) An approximate quantification of the hazardous constituents identified in the hazardous waste, within the precision produced by appropriate analytical methods.

(III) A description of blending procedures, if applicable, prior to firing the hazardous waste, including a detailed analysis of the hazardous waste prior to blending, an analysis of the material with which the hazardous waste is blended, and blending ratios.

(iii) A detailed engineering description of the boiler or industrial furnace, including:

(I) Manufacturer's name and model number of the boiler or industrial furnace;

(II) Type of boiler or industrial furnace;

(III) Maximum design capacity in appropriate units;

(IV) Description of the feed system for the hazardous waste, and, as appropriate, other fuels and industrial furnace feedstocks;

(V) Capacity of hazardous waste feed system;

(VI) Description of automatic hazardous waste feed cutoff system(s); and

(VII) Description of any pollution control system; and

(VIII) Description of stack gas monitoring and any pollution control monitoring systems.

(iv) 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.

(v) A detailed test schedule for each hazardous waste for which the trial burn is planned, including date(s), duration, quantity of hazardous waste to be burned, and other factors relevant to the Commissioner's decision under subpart 2(ii) of this subparagraph.

(vi) A detailed test protocol, including, for each hazardous waste identified, the ranges of hazardous waste feed rate, and, as appropriate, the feed rates of other fuels and industrial furnace feedstocks, and any other relevant parameters that may affect the ability of the boiler or industrial furnace to meet the performance standards in Rules 1200-01-11-.09(8)(e) through (h).

(vii) A description of, and planned operating conditions for, any emission control equipment that will be used.

(viii) Procedures for rapidly stopping the hazardous waste feed and controlling emissions in the event of an equipment malfunction.

(ix) Such other information as the Commissioner reasonably finds necessary to determine whether to approve the trial burn plan in light of the purposes of this subpart and the criteria in subpart 2(ii) of this subparagraph.

4. Trial Burn Procedures

(i) A trial burn must be conducted to demonstrate conformance with the standards of Rules 1200-01-11-.09(8)(e) through (h) under an approved trial burn plan.

(ii) The Commissioner shall approve a trial burn plan if he/she finds that:

(I) The trial burn is likely to determine whether the boiler or industrial furnace can meet the performance standards of Rules 1200-01-11-.09(8)(e) through (h);

(II) The trial burn itself will not present an imminent hazard to human health and the environment;

(III) The trial burn will help the Commissioner to determine operating requirements to be specified under Rule 1200-01-11-.09(8)(c)5; and

(IV) The information sought in the trial burn cannot reasonably be developed through other means.

(iii) The Commissioner must send a notice to all persons on the facility mailing list as set forth in item (7)(e)3(i)(V) of this Rule and to the appropriate units of State and local government as set forth in item (7)(e)3(i)(VI) of this Rule announcing the scheduled commencement and completion dates for the trial burn. The applicant may not commence the trial burn until after the Commissioner has issued such notice.

(I) This notice must be mailed within a reasonable time period before the trial burn. An additional notice is not required if the trial burn is delayed due to circumstances beyond the control of the facility or the permitting agency.

(II) This notice must contain:

I. The name and telephone number of applicant's contact person;

II. The name and telephone number of the permitting agency contact office;

III. The location where the approved trial burn plan and any supporting documents can be reviewed and copied; and

IV. An expected time period for commencement and completion of the trial burn.

(iv) The applicant must submit to the Commissioner a certification that the trial burn has been carried out in accordance with the approved trial burn plan, and must submit the results of all the determinations required in part 3 of this subparagraph. This submission shall be made within 90 days of completion of the trial burn, or later if approved by the Commissioner.

(v) All data collected during any trial burn must be submitted to the Commissioner following completion of the trial burn.

(vi) All submissions required by this subparagraph must be certified on behalf of the applicant by the signature of a person authorized to sign a permit application or a report described in part (2)(a)7 of this Rule.

5. Special Procedures for DRE Trial Burns

When a DRE trial burn is required under Rule 1200-01-11-.09(8)(e)1, the Commissioner will specify (based on the hazardous waste analysis data and other information in the trial burn plan) as trial Principal Organic Hazardous Constituents (POHCs) those compounds for which destruction and removal efficiencies must be calculated during the trial burn. These trial POHCs will be specified by the Commissioner based on information including his/her estimate of the difficulty of destroying the constituents identified in the hazardous waste analysis, their concentrations or mass in the hazardous waste feed, and, for hazardous waste containing or derived from wastes listed in Rule 1200-01-11-.02(4), the hazardous waste organic constituent(s) identified in Appendix VII of that Rule as the basis for listing.

6. Determinations Based on Trial Burn

During each approved trial burn (or as soon after the burn as is practicable), the applicant must make the following determinations:

(i) A quantitative analysis of the levels of antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, thallium, silver, and chlorine/chloride, in the feed streams (hazardous waste, other fuels, and industrial furnace feedstocks);

(ii) When a DRE trial burn is required under Rule 1200-01-11-.09(8)(e)1:

(I) A quantitative analysis of the trial POHCs in the hazardous waste feed;

(II) A quantitative analysis of the stack gas for the concentration and mass emissions of the trial POHCs; and

(III) A computation of destruction and removal efficiency (DRE), in accordance with the DRE formula specified in Rule 1200-01-11-.09(8)(e);

(iii) When a trial burn for chlorinated dioxins and furans is required under Rule 1200-01-11-.09(8)(e)5, a quantitative analysis of the stack gas for the concentration and mass emission rate of the 2,3,7,8-chlorinated tetra-octa congeners of chlorinated dibenzo-p-dioxins and furans, and a computation showing conformance with the emission standard;

(iv) When a trial burn for particulate matter, metals, or HCl/Cl_2 is required under Rules 1200-01-11-.09(8)(f), .09(8)(g)3 or 4 or .09(8)(h)2(ii) or 3, a quantitative analysis of the stack gas for the concentrations and mass emissions of particulate matter, metals, or hydrogen chloride (HCl) and chlorine (Cl_2), and computations showing conformance with the applicable emission performance standards;

(v) When a trial burn for DRE, metals, or HCl/Cl_2 is required under Rules 1200-01-11-.09(8)(e)1, .09(8)(g)3 or 4 or .09(8)(h)2(ii) or 3, a quantitative analysis of the scrubber water (if any), ash residues, other residues, and products for the purpose of estimating the fate of the trial POHCs, metals, and chlorine/chloride;

(vi) An identification of sources of fugitive emissions and their means of control;

(vii) A continuous measurement of carbon monoxide (CO), oxygen, and where required, hydrocarbons (HC), in the stack gas; and

(viii) Such other information as the Commissioner may specify as necessary to ensure that the trial burn will determine compliance with the performance standards in Rules 1200-01-11-.09(8)(e) through .09(8)(h) and to establish the operating conditions required by Rule 1200-01-11-.09(8)(c)5 as necessary to meet those performance standards.

7. Interim Status Boilers and Industrial Furnaces

For the purpose of determining feasibility of compliance with the performance standards of Rules 1200-01-11-.09(8)(e) through .09(8)(h) and of determining adequate operating conditions under Rule 1200-01-11-.09(8)(d), applicants owning or operating existing boilers or industrial furnaces operated under the interim status standards of Rule 1200-01-11-.09(8)(d) must either prepare and submit a trial burn plan and perform a trial burn in accordance with the requirements of this section or submit other information as specified in item (5)(b)8(i)(VI) of this Rule. The Commissioner must announce his or her intention to approve the trial burn plan in accordance with the timing and distribution requirements of subpart 4(iii) of this subparagraph. The contents of the notice must include: the name and telephone number of a contact person at the facility; the name and telephone number of a contact office at the permitting agency; the location where the trial burn plan and any supporting documents can be reviewed and copied; and a schedule of the activities that are required prior to permit issuance, including the anticipated time schedule for agency approval of the plan and the time period during which the trial burn would be conducted. Applicants who submit a trial burn plan and receive approval before submission of the part B permit application must complete the trial burn and submit the results specified in part 6 of this subparagraph with the part B permit application. If completion of this process conflicts with the date set for submission of the part B application, the applicant must contact the Commissioner to establish a later date for submission of the part B application or the trial burn results. If the applicant submits a trial burn plan with part B of the permit application, the trial burn must be conducted and the results submitted within a time period prior to permit issuance to be specified by the Commissioner.

(k) (RESERVED) [40 CFR 270.67]

(l) Remedial Action Plans (RAPs) [40 CFR 270.68]

Remedial Action Plans (RAPs) are special forms of permits that are regulated under paragraph (11) of this Rule.

(2) Application For a Permit

(a) General [40 CFR 270.10 & 270.11]

1. Any person who is required to have a permit (including new applicants and permittees with expiring permits) shall complete, sign, and submit an application to the Commissioner as described in this paragraph. Persons currently authorized with interim status (paragraph (3) of this Rule) shall apply for permits when required by the Commissioner. Persons covered by permits by rule (subparagraph (1)(c) of this Rule) need not apply. Procedures for application, issuance, and administration of emergency permits are found in subparagraph (1)(d) of this Rule. Procedures for application, issuance, and administration of research, development, and demonstration permits are found exclusively in subparagraph (1)(g) of this Rule. Additionally, subparagraphs (1)(e) and (f) of this Rule provide special requirements concerning applications for, respectively, hazardous waste incinerator permits and permits for land treatment demonstrations.

2. When a facility is owned by one person but is operated by another person, it is the operator's duty to obtain a permit, except that the owner must also sign the permit application.

3. The Commissioner shall not issue a permit before receiving a complete application for a permit except for permits-by-rule or emergency permits. An application for a permit is complete when the Commissioner receives an application form and any supplemental information which are completed to his or her satisfaction. An application for a permit is complete notwithstanding the failure of the owner or operator to submit the exposure information described in subparagraph (f) of this paragraph. The Commissioner may deny a permit for the active life of a hazardous waste management facility or unit before receiving a complete application for a permit.

4. Permit applicants shall keep records of all data and supplemental information used to complete permit applications for a period of at least 3 years from the date the application is signed.

5. Four copies of the required permit application information must be submitted to the Commissioner.

6. All reports, plans, specifications, and manuals must be prepared in proper technical format, typewritten, and bound (in 8 1/2 x 11 inch format). Any documents prepared by firms other than the owner or operator of the facility shall be accompanied by the letter of transmittal to the client.

7. All permit applications will be signed as follows:

(i) For a corporation: by a responsible corporate officer. For the purpose of this part, a responsible corporate officer means (I) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (II) the manager of one or more manufacturing, production or operation facilities employing more

than 250 persons or having gross annual sales or expenditures exceeding 25 million dollars (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(Note: The Department does not require specific assignments or delegations of authority to responsible corporate officers identified in subpart (i). The Department will presume that these responsible corporate officers have the requisite authority to sign permit applications unless the corporation has notified the Commissioner to the contrary. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions under item (i)(II) rather than to specific individuals.)

(ii) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively.

(iii) For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this part, a principal executive officer of a Federal agency includes: (I) the chief executive officer of the agency, or (II) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

8. All reports required by permits and other information requested by the Commissioner shall be signed by a person described in part 7 of this paragraph or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(i) The authorization is made in writing by a person described in part 7 of this subparagraph;

(ii) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or person of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

(iii) The written authorization is submitted to the Commissioner.

9. If an authorization under part 8 of this subparagraph is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of part 8 of this subparagraph must be submitted to the Commissioner prior to or together with any reports, information, or applications to be signed by an authorized representative.

10. (i) Any person signing a document under parts 7 or 8 of this subparagraph must make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted 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 for knowing violations."

(ii) For remedial action plans (RAPs) under paragraph 11 of this Rule, if the operator certifies according to subpart (i) of this part, then the owner may choose to make the following certification instead of the certification in subpart (i) of this part:

Based on my knowledge of the conditions of the property described in the RAP and my inquiry of the person or persons who manage the system referenced in the operator's certification, or those persons directly responsible for gathering the information, the information submitted 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 for knowing violations.

(b) Existing Facilities [40 CFR 270.10(e)]

1. Owners and operators of existing hazardous waste management facilities or of hazardous waste management facilities in existence on the effective date of statutory or regulatory amendments under the Act that render the facility subject to the requirement to have a permit must submit Part A of their permit application no later than whichever of the following dates first occurs:

(i) Ninety days after the effective date of regulations which first require them to comply with the standards set forth in Rules 1200-01-11-.05 or 1200-01-11-.09; or

(ii) Thirty days after the date they first became subject to the standards set forth in Rules 1200-01-11-.05 or 1200-01-11-.09; or

(iii) For generators generating greater than 100 kilograms but less than 1000 kilograms in a calendar month and treating, storing, or disposing of these wastes in an on-site facility for which he is required to apply for and obtain a permit under this Rule, by March 24, 1987.

2. Owners and operators of existing facilities who submitted Part A application (or their equivalent) to the Commissioner under emergency rules promulgated earlier under the Act shall not be required to resubmit their Part A application unless required to do so under subparagraph (d) of this paragraph.

3. The Commissioner may by issuance of a public notice extend the date by which owners and operators of specified classes of existing hazardous waste management facilities must submit Part A of their permit application if he finds that (i) there has been substantial confusion as to whether the owners and operators of such facilities were required to file a permit application and (ii) such confusion is attributable to ambiguities in Rules 1200-01-11-.01, 1200-01-11-.02, or 1200-01-11-.05.

4. The Commissioner may by compliance order issued under T.C.A. §68-212-111 extend the date by which the owner and operator of an existing hazardous waste management facility must submit Part A of their permit application.

5. The owner or operator of an existing facility must submit Part B of their permit application as required by the Commissioner or Board. The Commissioner or

Board may require such submission at any time after the due date of the Part A application for the facility, except that any owner or operator of an existing facility shall be allowed at least six months from the date of request to submit Part B of the application. Any owner or operator of an existing facility may voluntarily submit Part B of the application at any time.

6. Failure to furnish a requested Part B application on time, or to furnish in full the information required by the Part B application, is grounds for termination of interim status.

7. The Commissioner shall assign an Installation Identification Number to the owner or operator of an existing facility upon receipt of the Part A application.

8. All existing facilities shall follow the procedure requirements of Rule 1200-01-11-.07(2)(c)3(i) as part of the Part B application process.

(c) New Facilities [40 CFR 270.10(f),124.31]

1. Except as provided in part 4 of this subparagraph, no person shall begin physical construction of a new hazardous waste management facility without having submitted Part A and Part B of the permit application and having received an effective permit.

2. An application for a permit for a new facility (including both Part A and Part B) may be filed with the Commissioner at any time after promulgation of those standards in Rule 1200-01-11-.06, paragraph (9) et seq., applicable to such facility. Except as provided in part 4 of this subparagraph, all applications must be submitted at least 180 days before physical construction is expected to commence.

3. The owner or operator of a hazardous waste treatment or disposal facility which he anticipates will receive hazardous wastes generated off-site must submit his Part A permit application, completed to the best of his ability, to the Commissioner at least 120 days prior to submission of his Part B permit application. Failure to do so will result in the Commissioner delaying the processing of the Part B application for an equivalent amount of time.

(i) Pre-application public meeting and notice

(I) Applicability. The requirements of this subpart shall apply to all Part B applications seeking an initial permit or seeking a permit renewal for hazardous waste management units.

(II) Prior to submission of a Part B permit application for a facility, the applicant must hold at least one meeting with the public in order to solicit questions from the community and inform the community of proposed hazardous waste management activities. The applicant shall post a sign-in sheet or otherwise provide a voluntary opportunity for attendees to provide their names and addresses. At the pre-application community meeting the applicant must provide a community impact statement which shall also be maintained in the facility file. The community impact statement shall include the following:

I. A description of the facility (including a scale drawing or photograph of the facility) and the proposed hazardous waste management activities;

II. A description of security procedures at the facility;

III. Information on hazard prevention and preparedness, including a summary of the contingency plan and arrangements with local emergency authorities;

IV. A description of procedures, structures or equipment used to prevent employee exposure, hazards during unloading, runoff from handling areas and contamination of water supplies;

V. A description of traffic patterns, traffic volume and control, condition of access roads, and the adequacy of traffic control signals; and

VI. A description of the facility location information relative to compliance with flood plain requirements and with respect to any commercial applicant, seismic requirements.

(III) The applicant shall submit documentation of the public notices, a summary of the meeting, along with the list of attendees and their addresses developed under item (II) of this subpart, and copies of any written comments or materials submitted at the meeting, to the permitting agency as a part of the part B application, in accordance with part (5)(a)1 of this Rule.

(IV) The applicant must provide public notice of the pre-application meeting at least 30 days prior to the meeting.

I. The applicant shall provide public notice in all of the following forms:

A. A newspaper advertisement. The applicant shall publish a notice, fulfilling the requirements in subitem (IV)II of this subpart, in a newspaper of general circulation in the county or equivalent jurisdiction that hosts the proposed location of the facility. In addition, the Commissioner shall instruct the applicant to publish the notice in newspapers of general circulation in adjacent counties or equivalent jurisdictions, where the Commissioner determines that such publication is necessary to inform the affected public. The notice must be published as a display advertisement.

B. A visible and accessible sign. The applicant shall post a notice on a clearly marked sign at or near the facility, fulfilling the requirements in subitem (IV)II of this subpart. If the applicant places the sign on the facility property, then the

sign must be large enough to be readable from the nearest point where the public would pass by the site.

C. A broadcast media announcement. The applicant shall broadcast a notice, fulfilling the requirements in subitem (IV)II of this subpart, at least once on at least one local radio station or television station. The applicant may employ another medium with prior approval of the Commissioner.

D. A notice to the permitting agency. The applicant shall send a copy of the newspaper notice to the permitting agency and to the appropriate units of State and local government, in accordance with item (7)(e)3(i)(III) and (IV) of this Rule.

II. The notices required under subitem (IV)II of this subpart must include:

A. The date, time, and location of the meeting;

B. A brief description of the purpose of the meeting;

C. A brief description of the facility and proposed operations, including the address or a map (e.g., a sketched or copied street map) of the facility location;

D. A statement encouraging people to contact the facility at least 72 hours before the meeting if they need special access to participate in the meeting; and

E. The name, address, and telephone number of a contact person for the applicant.

4. Notwithstanding part 1 of this subparagraph, a person may construct a facility for the incineration of polychlorinated biphenyls pursuant to an approval issued by the EPA under section (6)(e) of the federal Toxic Substance Control Act and any person owning or operating such a facility may, at any time after construction or operation of such facility has begun, file an application for a permit to incinerate hazardous waste pursuant to this Rule.

(d) Updating Permit Application [40 CFR 270.10(g)]

1. If any owner or operator of a hazardous waste management facility has filed Part A of a permit application, the owner or operator shall file an amended Part A application with the Commissioner:

(i) No later than thirty days after the date on which additional hazardous wastes listed or otherwise identified by revision of Rule 1200-01-11-.02 become subject to the requirements of this Rule, if the facility is treating, storing, or disposing of any those newly listed or identified wastes;

(ii) As necessary to comply with provisions of paragraph (3)(c) of this Rule for changes during interim status.

2. The owner or operator of a facility who fails to comply with the updating requirements of part 1 of this subparagraph does not receive interim status as to the wastes not covered by duly filed Part A applications.

(e) Reapplications [40 CFR 270.10(h)]

Any hazardous waste management facility with an effective permit shall submit a new application at least 180 days before the expiration date of the effective permit, unless permission for a later date has been granted by the Commissioner. (The Commissioner shall not grant permission for applications to be submitted later than the expiration date of the existing permit.) Facilities shall follow the procedure requirements of Rule 1200-01-11-.07(2)(c)3(i) for all reapplications for a permit.

(f) Exposure Information [40 CFR 270.10(j)]

1. After February 2, 1986, any Part B permit application submitted by an owner or operator of a facility that stores, treats, or disposes of hazardous waste in a surface impoundment or a landfill must be accompanied by information, reasonably ascertainable by the owner or operator, on the potential for the public to be exposed to hazardous wastes or hazardous constituents through releases related to the unit. At a minimum, such information must address:

(i) Reasonably foreseeable potential releases from both normal operations and accidents at the unit, including releases associated with transportation to or from the unit;

(ii) The potential pathways of human exposure to hazardous wastes or constituents resulting from the releases described under subpart (i); and

(iii) The potential magnitude and nature of the human exposure resulting from such releases.

2. By 30 days after February 2, 1986, owners and operators of a landfill or a surface impoundment who have already submitted a Part B application must submit the exposure information required in part 1 of this subparagraph.

(g) The Commissioner may require a permittee or an applicant to submit information in order to establish permit conditions under subpart (8)(b)2(ii) and under part (8)(c)4 of this Rule.

(h) General application requirements [40 CFR 270.10(l)]

1. If the Commissioner concludes, based on one or more of the factors listed in subpart 1(i) of this subparagraph that compliance with the standards of 40 CFR 63 Subpart EEE alone may not be protective of human health or the environment, the Commissioner shall require the additional information or assessment(s) necessary to determine whether additional controls are necessary to ensure protection of human health and the environment. This includes information necessary to evaluate the potential risk to human health and/or the environment resulting from both direct and indirect exposure pathways. The Commissioner may also require a permittee or applicant to prove information necessary to determine whether such an assessment(s) should be required.

(i) The Commissioner shall base the evaluation of whether compliance with the standards of 40 CFR 63 Subpart EEE alone is protective of human health or the environment on factors relevant to the potential risk from a hazardous waste combustion unit, including as appropriate, any of the following factors:

(I) Particular site-specific considerations such as proximity to receptors (such as schools, hospitals, nursing homes, day care centers, parks, community activity centers, or other potentially sensitive receptors), unique dispersion patterns, etc.;

(II) Identities and quantities of emissions of persistent, bioaccumulative or toxic pollutants considering enforceable controls in place to limit those pollutants;

(III) Identities and quantities of nondioxin products of incomplete combustion most likely to be emitted and to pose significant risk based on known toxicities (confirmation of which should be made through emissions testing);

(IV) Identities and quantities of other off-site sources of pollutants in proximity of the facility that significantly influence interpretation of a facility-specific risk assessment;

(V) Presence of significant ecological considerations, such as the proximity of a particularly sensitive ecological area;

(VI) Volume and types of wastes, for example wastes containing highly toxic constituents;

(VII) Other on-site sources of hazardous air pollutants that significantly influence interpretation of the risk posed by the operation of the source in question;

(VIII) Adequacy of any previously conducted risk assessment, given any subsequent changes in conditions likely to affect risk; and

(IX) Such other factors as may be appropriate.

2. (RESERVED)

(3) Interim Status [40 CFR 270 Subpart G]

(a) Qualifying for Interim Status [40 CFR 270.70]

1. Any person who owns or operates an "existing HWM facility" or a facility in existence on the effective date of statutory or regulatory amendments under the Act that render the facility subject to the requirement to have a permit shall have interim status and shall be treated as having been issued a permit to the extent he or she has:

(i) Complied with the requirements of Rule 1200-01-11-.03(2) pertaining to notification of hazardous waste activity.

(Comment: Some existing facilities may not be required to file a notification under Rule 1200-01-11-.03(2). These facilities may qualify for interim status by meeting subpart 1(ii) of this subparagraph.)

(ii) Complied with the requirements of paragraph (2) of this Rule governing submission of Part A applications;

2. Failure to Qualify for Interim Status

If the Department has reason to believe upon examination of a Part A application that it fails to meet the requirements of paragraph (4) of this Rule, it shall notify the owner or operator in writing of the apparent deficiency. Such notice shall specify the grounds for Department's belief that the application is deficient. The owner or operator shall have 30 days from receipt to respond to such a notification and to explain or cure the alleged deficiency in his Part A application. If, after such notification and opportunity for response, the Department determines that the application is deficient it may take appropriate enforcement action.

3. Part 1 of this subparagraph shall not apply to any facility which has been previously denied a RCRA or a Hazardous Waste Permit or if authority to operate the facility under the Act has been previously terminated.

(b) Operation During Interim Status [40 CFR 270.71]

1. During the interim status period the facility shall not:

(i) Treat, store, or dispose of hazardous waste not specified in Part A of the permit application;

(ii) Employ processes not specified in Part A of the permit application; or

(iii) Exceed the design capacities specified in Part A of the permit application.

2. Interim status standards. During interim status, owners or operators shall comply with the interim status standards at Rule 1200-01-11-.05.

(c) Changes During Interim Status [40 CFR 270.72]

1. Except as provided in part 2 of this subparagraph, the owner or operator of an interim status facility may make the following changes at the facility:

(i) Treatment, storage, or disposal of new hazardous wastes not previously identified in Part A of the permit application (and, in the case of newly listed or identified wastes, addition of the units being used to treat, store, or dispose of the hazardous wastes on the effective date of the listing or identification) if the owner or operator submits a revised Part A permit application prior to such treatment, storage, or disposal;

(ii) Increases in the design capacity of processes used at the facility if the owner or operator submits a revised Part A permit application prior to such a change (along with a justification explaining the need for the change) and the Commissioner approves the changes because:

(I) There is a lack of available treatment, storage, or disposal capacity at other hazardous waste management facilities, or

(II) The change is necessary to comply with a Federal, State, or local requirement.

(iii) Changes in the processes for the treatment, storage, or disposal of hazardous waste or addition of processes if the owner or operator submits a revised Part A permit application prior to such change (along with a justification explaining the need for the change) and the Commissioner approves the change because:

(I) The change is necessary to prevent a threat to human health and the environment because of an emergency situation, or

(II) The change is necessary to comply with a Federal, State, or local requirement.

(iv) Changes in the ownership or operational control of a facility if the new owner or operator submits a revised Part A permit application no later than 90 days prior to the scheduled change. When a transfer of operational control of a facility occurs, the old owner or operator shall comply with the requirements of Rule 1200-01-11-.05(8) (Financial Requirements), until the new owner or operator has demonstrated to the Commissioner that he is complying with the requirements of that paragraph. The new owner or operator must demonstrate compliance with Rule 1200-01-11-.05(8) requirements within six months of the date of the change in ownership or operational control of the facility. Upon demonstration to the Commissioner by the new owner or operator of compliance with Rule 1200-01-11-.05(8), the Commissioner shall notify the old owner or operator in writing that he no longer needs to comply with Rule 1200-01-11-.05(8) as of the date of demonstration. All other interim status duties are transferred effective immediately upon the date of the change in ownership or operational control of the facility.

(v) Changes made in accordance with an interim status corrective action order issued by EPA under section 3008(h) or other Federal authority, by an authorized State under comparable State authority, or by a court in a judicial action brought by EPA or by an authorized State. Changes under this paragraph are limited to the treatment, storage, or disposal of solid waste from releases that originate within the boundary of the facility.

(vi) Addition of newly regulated units for the treatment, storage, or disposal of hazardous waste if the owner or operator submits a revised part A permit application on or before the date on which the unit becomes subject to the new requirements.

2. Except as specifically allowed under this paragraph, changes listed under part 1 of this subparagraph may not be made if they amount to reconstruction of the hazardous waste management facility. Reconstruction occurs when the capital investment in the changes to the facility exceeds 50 percent of the capital cost of a comparable entirely new hazardous waste management facility. If all other requirements are met, the following changes may be made even if they amount to a reconstruction:

(i) Changes made solely for the purposes of complying with the requirements of Rule 1200-01-11-.05(10)(d) for tanks and ancillary equipment.

(ii) If necessary to comply with Federal, State, or local requirements, changes to an existing unit, changes solely involving tanks or containers, or addition of replacement surface impoundments that satisfy the standards of federal RCRA section 3004(o).

(iii) Changes that are necessary to allow owners or operators to continue handling newly listed or identified hazardous wastes that have been treated, stored, or disposed of at the facility prior to the effective date of the rule establishing the new listing or identification.

(iv) Changes during closure of a facility or of a unit within a facility made in accordance with an approved closure plan.

(v) Changes necessary to comply with an interim status corrective action order issued by EPA under section 3008(h) or other Federal authority, by an authorized State under comparable State authority, or by a court in a judicial proceeding brought by EPA or an authorized State, provided that such changes are limited to the treatment, storage, or disposal of solid waste from releases that originate within the boundary of the facility.

(vi) Changes to treat or store, in tanks, containers, or containment buildings, hazardous wastes subject to land disposal restrictions imposed by Rule 1200-01-11-.10 or federal RCRA section 3004, provided that such changes are made solely for the purpose of complying with Rule 1200-01-11-.10 or federal RCRA section 3004.

(vii) Addition of newly regulated units under subpart 1(vi) of this subparagraph.

(viii) Changes necessary to comply with standards under 40 CFR part 63, Subpart EEE-National Emission Standards for Hazardous Air Pollutants From Hazardous Waste Combustors.

(d) Termination of Interim Status [40 CFR 270.73]

Interim status terminates:

1. When final administrative disposition of a permit application, except an application for a remedial action plan (RAP) under paragraph (11) of this Rule, is made.

2. When interim status is terminated as provided in part (2)(b)6 of this Rule.

3. For owners or operators of each land disposal facility which has been granted interim status prior to November 8, 1984, on November 8, 1985, unless:

(i) The owner or operator submits a Part B application for a permit for such facility prior to that date; and

(ii) The owner or operator certifies that such facility is in compliance with all applicable ground-water monitoring and financial responsibility requirements.

4. For owners or operators of each land disposal facility which is in existence on the effective date of statutory or regulatory amendments under the Act that render

the facility subject to the requirement to have a permit and which is granted interim status, twelve months after the date on which the facility first becomes subject to such permit requirement unless the owner or operator of such facility:

(i) Submits a Part B application for a permit for such facility before the date 12 months after the date on which the facility first becomes subject to such permit requirement; and

(ii) Certifies that such facility is in compliance with all applicable ground water monitoring and financial responsibility requirements.

5. For owners or operators of any land disposal unit that is granted authority to operate under subparts (3)(c)1(i),(ii) or (iii) of this Rule, on the date 12 months after the effective date of such requirement, unless the owner or operator certifies that such unit is in compliance with all applicable ground-water monitoring and financial responsibility requirements.

6. For owners and operators of each incinerator facility which has achieved interim status prior to November 8, 1984, interim status terminates on November 8, 1989, unless the owner or operator of the facility submits a Part B application for a permit for an incinerator facility by November 8, 1986.

7. For owners or operators of any facility (other than a land disposal or an incinerator facility) which has achieved interim status prior to November 8, 1984, interim status terminates on November 8, 1992, unless the owner or operator of the facility submits a Part B application for a permit for the facility by November 8, 1988.

8. For facilities where no hazardous waste remains after closure, when prior to the due date of his Part B application, the owner or operator voluntarily closes his facility in accordance with Rule 1200-01-11-.05(7)(b) through (f) and the Commissioner grants his request to withdraw his interim status and Part A application.

(4) Contents of Part A

(a) Required Information [40 CFR 270.13]

The Part A permit application must include, but shall not necessarily be limited to, the following information:

1. The activities conducted by the applicant which require it to obtain a permit under this Rule;

2. The name, mailing address, and location of the facility for which the application is submitted;

3. Up to four SIC codes which best reflect the principal products or services provided by the facility;

4. The operator's name, address, telephone number, ownership status, and status as Federal, State, private, public, or other entity;

5. A listing of all permits or construction approvals received or applied for by this facility under any of the following programs:

(i) State or Federal programs regulating underground injections;

(ii) State or Federal programs regulating point source discharges to waters of the State;

(iii) State, Federal, or local programs regulating emissions to the air;

(iv) State or Federal programs regulating discharges of dredge or fill material to waters of the state; and

(v) Other relevant State or Federal environmental permit programs;

6. A topographic map (or other map if a topographic map is unavailable) extending one mile beyond the property boundaries of the source, depicting the facility and each of its intake and discharge structures; each of its hazardous waste treatment, storage, or disposal facilities; each well where fluids from the facility are injected underground; and those wells, springs, other surface water bodies, and drinking water wells listed in public records or otherwise known to the applicant within 1/4 mile of the facility property boundary;

7. A brief description of the nature of the business;

8. The latitude and longitude of the facility;

9. The name, address, and telephone number of the owner of the facility;

10. An indication of whether the facility is new or existing and whether it is a first or revised application;

11. For existing facilities, a scale drawing of the facility showing the location of all past, present, and future treatment, storage, and disposal areas;

12. For existing facilities, photographs of the facility clearly delineating all existing structures; existing treatment, storage, and disposal areas; and sites of future treatment, storage, and disposal areas;

13. A description of the processes to be used for treating, storing, and disposing of hazardous waste, and the design capacity of these items;

14. A specification of the hazardous wastes listed or designated under Rule 1200-01-11-.02 to be treated, stored, or disposed of at the facility, an estimate of the quantity of such wastes to be treated, stored, or disposed of annually, and a general description of the processes to be used for such wastes; and

15. For hazardous debris, a description of the debris category(ies) and contaminant category(ies) to be treated, stored, or disposed of at the facility.

(b) Required Form

Part A permit applications must be submitted on forms provided by the Department and completed as per the accompanying instructions.

(Note: The Part A permit application information requirements as stated in this paragraph are substantially equivalent to those similarly required by EPA under 40 CFR 270.10 and 270.13. Thus, copies of the EPA Part A permit application submitted to EPA will, if properly completed, suffice as the copies of the Part A permit application required by this paragraph.)

(5) Contents of Part B

Part B of the permit application consists of the general information requirements of this Rule, and the specific information requirements in paragraphs (5) and (6) of this Rule applicable to the facility. The part B information requirements presented in paragraphs (5) and (6) reflect the standards promulgated in Rule 1200-01-11-.06. These information requirements are necessary in order for the Department to determine compliance with Rule 1200-01-11-.06 standards. If owners and operators of HWM facilities can demonstrate that the information prescribed in part B can not be provided to the extent required, the Commissioner may make allowance for submission of such information on a case-by-case basis. Information required in part B shall be submitted to the Commissioner and signed in accordance with the requirements in Rule 1200-01-11-.07(2)(a). Certain technical data, such as design drawings and specifications, and engineering studies shall be certified by a qualified Registered Professional Engineer. For post-closure permits, only the information specified in Rule 1200-01-11-.07(5)(b)14 is required in part B of this permit application.

(a) General Requirements [40 CFR 270.14]

1. General Information Requirements [40 CFR 270.14(b)]

The following information is required for all HWM facilities, except as Rule 1200-01-11-.06(1) provides otherwise:

(i) A general description of the facility.

(ii) Chemical and physical analyses of the hazardous waste and hazardous debris to be handled at the facility. At a minimum, these analyses shall contain all the information which must be known to treat, store, or dispose of the wastes properly in accordance with Rule 1200-01-11-.06.

(iii) A copy of the waste analysis plan required by Rule 1200-01-11-.06(2)(d)2 and, if applicable Rule 1200-01-11-.06(2)(d)3.

(iv) A description of the security procedures and equipment required by Rule 1200-01-11-.06(2)(e), or a justification demonstrating the reasons for requesting a waiver of this requirement.

(v) A copy of the general inspection schedule required by Rule 1200-01-11-.06(2)(f)2. Include, where applicable, as part of the inspection schedule, specific requirements in Rules 1200-01-11-.06(9)(e), (10)(d)9, (10)(f), (11)(g), (12)(e), (13)(d), (14)(d), (27)(c), (30)(d), (31)(c), (31)(d), (31)(i), (32)(e), (32)(f), (32)(g), and (32)(i).

(vi) A justification of any request for (a) waiver(s) of the preparedness and prevention requirements of Rule 1200-01-11-.06(3).

(vii) A copy of the contingency plan required by Rule 1200-01-11-.06(4). Note: Include, where applicable, as part of the contingency plan, specific requirements in Rules 1200-01-11-.06(11)(h) and (12)(f).

(viii) A description of procedures, structures, or equipment used at the facility to:

(I) Prevent hazards in unloading operations (for example, ramps, special forklifts);

(II) Prevent runoff from hazardous waste handling areas to other areas of the facility or environment, or to prevent flooding (for example, berms, dikes, trenches);

(III) Prevent contamination of water supplies;

(IV) Mitigate effects of equipment failure and power outages;

(V) Prevent undue exposure of personnel to hazardous waste (for example, protective clothing); and

(VI) Prevent releases to atmosphere.

(ix) A description of precautions to prevent accidental ignition or reaction of ignitable, reactive, or incompatible wastes as required to demonstrate compliance with Rule 1200-01-11-.06(2)(h) including documentation demonstrating compliance with Rule 1200-01-11-.06(2)(h)3.

(x) Traffic pattern, estimated volume (number, types of vehicles) and control (for example, show turns across traffic lanes, and stacking lanes (if appropriate); describe access road surfacing and load bearing capacity; show traffic control signals).

(xi) Facility location information;

(I) In order to determine the applicability of the seismic standard [Rule 1200-01-11-.06(2)(i)1] the owner or operator of a new facility must identify the political jurisdiction (e.g., county, township, or election district) in which the facility is proposed to be located.

(Comment: If the county or election district is not listed in Appendix VI of Rule 1200-01-11-.06, no further information is required to demonstrate compliance with Rule 1200-01-11-.06(2)(i)1.)

(II) If the facility is proposed to be located in an area listed in Appendix VI of Rule 1200-01-11-.06, the owner or operator shall demonstrate compliance with the seismic standard. This demonstration may be made using either published geologic data or data obtained from field investigations carried out by the applicant. The information provided must be of such quality to be acceptable to geologists experienced in identifying and evaluating seismic activity. The information submitted must show that either:

I. No faults which have had displacement in Holocene time are present, or no lineations which suggest the presence of a fault (which have displacement in Holocene time) within 3,000 feet of a facility are present, based on data from:

A. Published geologic studies,

B. Aerial reconnaissance of the area within a five-mile radius from the facility,

C. An analysis of aerial photographs covering a 3,000 foot radius of the facility, and

D. If needed to clarify the above data, a reconnaissance based on walking portions of the area within 3,000 feet of the facility, or

II. If faults (to include lineations) which have had displacement in Holocene time are present within 3,000 feet of a facility, no faults pass within 200 feet of the portions of the facility where treatment, storage, or disposal of hazardous waste will be conducted, based on data from a comprehensive geologic analysis of the site. Unless a site analysis is otherwise conclusive concerning the absence of faults within 200 feet of such portions of the facility data shall be obtained from a subsurface exploration (trenching) of the area within a distance no less than 200 feet from portions of the facility where treatment, storage, or disposal of hazardous waste will be conducted. Such trenching shall be performed in a direction that is perpendicular to known faults (which have had displacement in Holocene time) passing within 3,000 feet of the portions of the facility where treatment, storage, or disposal of hazardous waste will be conducted. Such investigation shall document with supporting maps and other analyses, the location of faults found.

(Comment: The Guidance Manual for the Location Standards provides greater detail on the content of each type of seismic investigation and the appropriate conditions under which each approach or a combination of approaches would be used.)

(III) Owners and operators of all facilities shall provide an identification of whether the facility is located within a 100-year floodplain. This identification must indicate the source of data for such determination and include a copy of the relevant Federal Insurance Administration (FIA) flood map, if used, or the calculations and maps used where an FIA map is not available. Information shall also be provided identifying the 100-year flood level and any other special flooding factors (e.g., wave action) which must be considered in designing, constructing, operating, or maintaining the facility to withstand washout from a 100-year flood.

(Comment: Where maps for the National Flood Insurance Program produced by the Federal Insurance Administration (FIA) of the Federal Emergency Management Agency are available, they will normally be determinative of whether a facility is located within or outside of the 100-year floodplain. However, where the FIA map excludes an area (usually areas of the floodplain less than 200 feet in width), these areas must be considered and a determination made as to whether they are in the 100-year floodplain. Where FIA maps are not available for a proposed facility location, the owner or operator must use equivalent mapping techniques to determine whether the facility is within the 100-year floodplain, and if so located, what the 100-year flood elevation would be.)

(IV) Owners and operators of facilities located in the 100-year floodplain must provide the following information:

I. Engineering analysis to indicate the various hydrodynamic and hydrostatic forces expected to result at the site as consequence of a 100-year flood.

II. Structural or other engineering studies showing the design of operational units (e.g., tanks, incinerators) and flood protection devices (e.g., floodwalls, dikes) at the facility and how these will prevent washout.

III. If applicable, and in lieu of subitems I and II above, a detailed description of procedures to be followed to remove hazardous waste to safety before the facility is flooded, including:

A. Timing of such movement relative to flood levels, including estimated time to move the waste, to show that such movement can be completed before floodwaters reach the facility.

B. A description of the location(s) to which the waste will be moved and demonstration that those facilities will be eligible to receive hazardous waste in accordance with the regulations under Rules 1200-01-11-.05 through .07 and .09.

C. The planned procedures, equipment, and personnel to be used and the means to ensure that such resources will be available in time for use.

D. The potential for accidental discharges of the waste during movement.

(V) Existing facilities NOT in compliance with Rule 1200-01-11-.06(2)(i)2 shall provide a plan showing how the facility will be brought into compliance and a schedule for compliance.

(xii) An outline of both the introductory and continuing training programs by owners or operators to prepare persons to operate or maintain the HWM facility in a safe manner as required to demonstrate compliance with Rule 1200-01-11-.06(2)(g). A brief description of how training will be designed to meet actual job tasks in accordance with requirements in Rule 1200-01-11-.06(2)(g)1(iii).

(xiii) A copy of the closure plan and, where applicable, the post-closure plan required by Rule 1200-01-11-.06(7)(c), (7)(i) and (10)(h). Include, where applicable, as part of the plans, specific requirements in Rules 1200-01-11-.06(9)(i), (10(h), (11)(i), (12)(i), (13)(k), (14)(k), (15)(i), (27)(b) and (27)(d).

(xiv) For hazardous waste disposal units that have been closed, documentation that notices required under Rule 1200-01-11-.07(7)(j) have been filed.

(xv) The most recent closure cost estimate for the facility prepared in accordance with Rule 1200-01-11-.06(8)(c) and a copy of the documentation required to demonstrate financial assurance under Rule 1200-01-11-.06(8)(d). For a new facility, a copy of the required documentation may be submitted 60 days prior to the initial receipt of hazardous wastes, if that is later than the submission of the Part B.

(xvi) Where applicable, the most recent post-closure cost estimate for the facility prepared in accordance with Rule 1200-01-11-.06(8)(e) plus a copy of the documentation required to demonstrate financial assurance under Rule 1200-01-11-.06(8)(f). For a new facility, a copy of the required documentation may be submitted 60 days prior to the initial receipt of hazardous wastes, if that is later than the submission of the Part B.

(xvii) Where applicable, a copy of the insurance policy or other documentation which comprises compliance with the requirements of Rule 1200-01-11-.06(8)(k). For a new facility, documentation showing the amount of insurance meeting the specification of Rule 1200-01-11-.06(8)(k)1 and, if applicable, that the owner or operator plans to have in effect before initial receipt of hazardous waste for treatment, storage, or disposal. A request for a variance in the amount of required coverage, for a new or existing facility, may be submitted as specified in Rule 1200-01-11-.06(8)(k)3.

(xviii) (Reserved) [40 CFR 270.14(b)(18)]

(xix) A topographic map showing a distance of 1000 feet around the facility at a scale of 2.5 centimeters (1 inch) equal to not more than 61.0 meters (200 feet). Contours must be shown on the map. The contour interval must be sufficient to clearly show the pattern of surface water flow in the vicinity of and from each operational unit of the facility. For example, contours with an interval of 1.5 meters (5 feet), if relief is greater than 6.1 meters (20 feet), or an interval of 0.6 meters (2 feet), if relief is less than 6.1 meters (20 feet). Owners and operators of HWM facilities located in mountainous areas should use large contour intervals to adequately show topographic profiles of facilities. The map shall clearly show the following:

(I) Map scale and date.

(II) 100-year floodplain area.

(III) Surface waters including intermittent streams.

(IV) Surrounding land uses (residential, commercial, agricultural, recreational).

(V) A wind rose (i.e., prevailing wind-speed and direction).

(VI) Orientation of the map (north arrow).

(VII) Legal boundaries of the HWM facility site.

(VIII) Access control (fences, gates).

(IX) Injection and withdrawal wells both on-site and off-site.

(X) Buildings; treatment, storage, or disposal operations; or other structure (recreation areas, runoff control systems, access and internal roads, storm, sanitary, and process sewerage systems, loading and unloading areas, fire control facilities, etc.)

(XI) Barriers for drainage or flood control.

(XII) Location of operational units within the HWM facility site, where hazardous waste is (or will be) treated, stored, or disposed (include equipment cleanup areas).

(Note: For large HWM facilities the Department will allow the use of other scales on a case-by-case basis.)

(xx) (Reserved) [40 CFR 270.14(b)(20)]

(xxi) For land disposal facilities, if a case-by-case extension has been approved under Rule 1200-01-11-.10(1)(e) or a petition has been approved under Rule 1200-01-11-.10(1)(f), a copy of the notice of approval for the extension or petition is required.

(xxii) A summary of the pre-application meeting, along with a list of attendees and their addresses, and copies of any written comments or materials submitted at the meeting, as required under item (2)(c)3(i)(III).

2. The following additional information is also required:

(i) A description of the forms and procedures used or to be used to maintain the operating record required by Rule 1200-01-11-.06(5)(d).

(ii) A description of any other wastes or other materials planned to be stored, treated, or disposed of along with hazardous waste in the hazardous waste management units covered by the permit application, and a description of how such other wastes or other materials will be managed in order to comply with the requirements of Rule 1200-01-11-.06(2)(k).

(iii) The name, address, and telephone number of each person who is the legal or beneficial owner of ten percent or more of the stock of the company or corporation applying for the permit; a statement as to whether any of these persons have been convicted of any felony or have been convicted of a misdemeanor for the unlawful storage, treatment, or disposal of hazardous waste; and a full description of such convictions.

(b) Specific Information Requirements

1. Specific Part B Information Requirements For Containers [40 CFR 270.15]

Except as otherwise provided in Rule 1200-01-11-.06(9)(a), owners or operators of facilities that store containers of hazardous waste must provide the following additional information:

(i) A description of the containment system to demonstrate compliance with Rule 1200-01-11-.06(9)(f). Show at least the following:

(I) Basic design parameters, dimensions, and materials of construction;

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

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

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

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

(ii) For storage areas that store containers holding wastes that do not contain free liquids, a demonstration of compliance with Rule 1200-01-11-.06(9)(f)3, including:

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

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

(iii) Sketches, drawings, or data demonstrating compliance with Rule 1200-01-11-.06(9)(g) (location of buffer zone and containers holding ignitable or reactive wastes) and Rule 1200-01-11-.06(9)(h)3 (location of incompatible wastes), where applicable;

(iv) Where incompatible wastes are stored or otherwise managed in containers, a description of the procedures used to ensure compliance with Rules 1200-01-11-.06(9)(h)1 and 2, and Rules 1200-01-11-.06(2)(h)2 and 3; and

(v) Information on air emission control equipment as required in part 13 of this subparagraph.

2. Specific Part B Information Requirements for Tank Systems [40 CFR 270.16]

Except as otherwise provided in Rule 1200-01-11-.06(10)(a), owners and operators of facilities that use tanks to store or treat hazardous waste must provide the following additional information:

(i) A written assessment that is reviewed and certified by a qualified Professional Engineer as to the structural integrity and suitability for handling hazardous waste of each tank system, as required under Rules 1200-01-11-.06(10)(b) and (10)(c);

(ii) Dimensions and capacity of each tank;

(iii) Description of feed systems, safety cutoff, bypass systems, and pressure controls (e.g., vents);

(iv) A diagram of piping, instrumentation, and process flow for each tank system;

(v) A description of materials and equipment used to provide external corrosion protection, as required under Rule 1200-01-11-.06(10)(c)1(iii)(II);

(vi) For new tank systems, a detailed description of how the tank system(s) will be installed in compliance with Rule 1200-01-11-.06(10)(c)2, 3, 4, and 5;

(vii) Detailed plans and description of how the secondary containment system for each tank system is or will be designed, constructed, and operated to meet the requirements of Rule 1200-01-11-.06(10)(d)1, 2, 3, 4, 5, and 6;

(viii) For tank systems for which a variance from the requirements of Rule 1200-01-11-.06(10)(d) is sought (as provided by Rule 1200-01-11-.06(10)(d)7):

(I) Detailed plans and engineering and hydrogeologic reports, as appropriate, describing alternate design and operating practices that will, in conjunction with location aspects, prevent the migration of any hazardous waste or hazardous constituents into the ground water or surface water during the life of the facility, or

(II) A detailed assessment of the substantial present or potential hazards posed to human health or the environment should a release enter the environment;

(ix) Description of controls and practices to prevent spills and overflows, as required under Rule 1200-01-11-.06(10)(e)2;

(x) For tank systems in which ignitable, reactive, or incompatible wastes are to be stored or treated, a description of how operating procedures and tank system and facility design will achieve compliance with the requirements of Rules 1200-01-11-.06(10)(i) and (j); and

(xi) Information on air emission control equipment as required in part 13 of this subparagraph.

3. Specific Part B Information Requirements for Surface Impoundments [40 CFR 270.17]

Except as otherwise provided in Rule 1200-01-11-.06(1)(b) or (d), owners and operators of facilities that store, treat or dispose of hazardous waste in surface impoundments must provide the following additional information:

(i) A list of the hazardous wastes placed or to be placed in each surface impoundment;

(ii) Detailed plans and an engineering report describing how the surface impoundment is designed and is or will be constructed, operated, and maintained to meet the requirements of Rules 1200-01-11-.06(2)(j), (11)((b), (11)(c), and (11)(d), addressing the following items:

(I) The liner system (except for an existing portion of a surface impoundment). If an exemption from the requirement for a liner is sought as provided by Rule 1200-01-11-.06(11)(b)2, submit detailed plans and engineering and hydrogeologic reports, as appropriate, describing alternate design and operating practices that will, in conjunction with location aspects, prevent the migration of any hazardous constituents into the ground water or surface water at any future time;

(II) The double liner and leak (leachate) detection, collection, and removal system, if the surface impoundment must meet the requirements of Rule 1200-01-11-.06(11)(b)3. If an exemption from the requirements for double liners and a leak detection, collection, and removal system or alternative design is sought as provided by Rule 1200-01-11-.06(11)(b)4, 5, or 6, submit appropriate information;

(III) If the leak detection system is located in a saturated zone, submit detailed plans and an engineering report explaining the leak detection system design and operation, and the location of the saturated zone in relation to the leak detection system;

(IV) The construction quality assurance (CQA) plan if required under Rule 1200-01-11-.06(2)(j);

(V) Proposed action leakage rate, with rationale, if required under Rule 1200-01-11-.06(2)(c), and response action plan, if required under Rule 1200-01-11-.06(11)(d);

(VI) Prevention of overtopping; and

(VII) Structural integrity of dikes;

(iii) A description of how each surface impoundment, including the double liner system, leak detection system, cover system, and appurtenances for control of overtopping, will be inspected in order to meet the requirements of Rule 1200-01-11-.06(11)(g)1, 2, and 4. This information must be included in the inspection plan submitted under subpart (5)(a)1(v) of this Rule;

(iv) A certification by a qualified engineer which attests to the structural integrity of each dike, as required under Rule 1200-01-11-.06(11)(g)3. For new units, the owner or operator must submit a statement by a qualified engineer that he will provide such a certification upon completion of construction in accordance with the plans and specifications;

(v) A description of the procedure to be used for removing a surface impoundment from service, as required under Rule 1200-01-11-.06(11)(h)2 and 3. This information should be included in the contingency plan submitted under subpart (5)(a)1(vii) of this Rule;

(vi) A description of how hazardous waste residues and contaminated materials will be removed from the unit at closure, as required under Rule 1200-01-11-.06(11)(i)1(i). For any wastes not to be removed from the unit upon closure, the owner or operator must submit detailed plans

and an engineering report describing how Rule 1200-01-11-.06(11)(i)1(ii) and 2 will be complied with. This information should be included in the closure plan and, where applicable, the post-closure plan submitted under subpart (5)(a)1(xiii) of this Rule;

(vii) If ignitable or reactive wastes are to be placed in a surface impoundment, an explanation of how Rule 1200-01-11-.06(11)(j) will be complied with;

(viii) If incompatible wastes, or incompatible wastes and materials will be placed in a surface impoundment, an explanation of how Rule 1200-01-11-.06(11)(k) will be complied with;

(ix) A waste management plan for Hazardous Waste Codes F020, F021, F022, F023, F026, and F027 describing how the surface impoundment is or will be designed, constructed, operated, and maintained to meet the requirements of Rule 1200-01-11-.06(11)(l). This submission must address the following items as specified in Rule 1200-01-11-.06(11)(l):

(I) The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

(II) The attenuative properties of underlying and surrounding soils or other materials;

(III) The mobilizing properties of other materials co-disposed with these wastes; and

(IV) The effectiveness of additional treatment, design, or monitoring techniques; and

(x) Information on air emission control equipment as required in part 13 of this subparagraph.

4. Specific Part B Information Requirements for Waste Piles [40 CFR 270.18]

Except as otherwise provided in Rule 1200-01-11-.06(1)(b) or (d), owners and operators of facilities that store or treat hazardous waste in waste piles must provide the following additional information:

(i) A list of hazardous wastes placed or to be placed in each waste pile;

(ii) If an exemption is sought to Rule 1200-01-11-.06(2)(b) and Rule 1200-01-11-.06(6) as provided by Rule 1200-01-11-.06(12)(a)3 or Rule 1200-01-11-.06(6)(a)2(ii), an explanation of how the standards of Rule 1200-01-11-.06(12)(a)3 will be complied with or detailed plans and an engineering report describing how the requirements of Rule 1200-01-11-.06(6)(a)2(ii) will be met;

(iii) Detailed plans and an engineering report describing how the waste pile is designed and is or will be constructed, operated, and maintained to meet the requirements of Rules 1200-01-11-.06(2)(j), (12)(b), (12)(c) and (12)(d), addressing the following items:

(I) I. The liner system (except for an existing portion of a waste pile), if the waste pile must meet the requirements of Rule 1200-01-11-.06(12)(b)1. If an exemption from the requirement for a liner is sought as provided by Rule 1200-01-11-.06(12)(b)2, submit detailed plans, and engineering and hydrogeological reports, as appropriate, describing alternate designs and operating practices that will, in conjunction with location aspects, prevent the migration of any hazardous constituents into the ground water or surface water at any future time;

II. The double liner and leak (leachate) detection, collection, and removal system, if the waste pile must meet the requirements of Rule 1200-01-11-.06(12)(b)3. If an exemption from the requirements for double liners and a leak detection, collection, and removal system or alternative design is sought as provided by Rule 1200-01-11-.06(12)(b)4, 5, or 6, submit appropriate information;

III. If the leak detection system is located in a saturated zone, submit detailed plans and an engineering report explaining the leak detection system design and operation, and the location of the saturated zone in relation to the leak detection system;

IV. The construction quality assurance (CQA) plan if required under Rule 1200-01-11-.06(2)(j); and

V. Proposed action leakage rate, with rationale, if required under Rule 1200-01-11-.06(12)(c), and response action plan, if required under Rule 1200-01-11-.06(12)(d);

(II) Control of run-on;

(III) Control of run-off;

(IV) Management of collection and holding units associated with run-on and run-off control systems; and

(V) Control of wind dispersal of particulate matter, where applicable;

(iv) A description of how each waste pile, including the double liner system, leachate collection and removal system, leak detection system, cover system, and appurtenances for control of run-on and run-off, will be inspected in order to meet the requirements of Rule 1200-01-11-.06(12)(e)1, 2, and 3. This information must be included in the inspection plan submitted under subpart (5)(a)1(v) of this Rule;

(v) If treatment is carried out on or in the pile, details of the process and equipment used, and the nature and quality of the residuals;

(vi) If ignitable or reactive wastes are to be placed in a waste pile, an explanation of how the requirements of Rule 1200-01-11-.06(12)(g) will be complied with;

(vii) If incompatible wastes, or incompatible wastes and materials will be placed in a waste pile, an explanation of how Rule 1200-01-11-.06(12)(h) will be complied with;

(viii) A description of how hazardous waste residues and contaminated materials will be removed from the waste pile at closure, as required under Rule 1200-01-11-.06(12)(i)1. For any waste not to be removed from the waste pile upon closure, the owner or operator must submit detailed plans and an engineering report describing how Rule 1200-01-11-.06(14)(k)1 and 2 will be complied with. This information should be included in the closure plan and, where applicable, the post-closure plan submitted under subpart (5)(a)1(xiii) of this Rule; and

(ix) A waste management plan for Hazardous Waste Codes F020, F021, F022, F023, F026, and F027 describing how a waste pile that is not enclosed (as defined in Rule 1200-01-11-.06(12)(a)3) is or will be designed, constructed, operated, and maintained to meet the requirements of Rule 1200-01-11-.06(12)(j). This submission must address the following items as specified in Rule 1200-01-11-.06(12)(j):

(I) The volume, physical, and chemical characteristics of the wastes to be disposed in the waste pile, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

(II) The attenuative properties of underlying and surrounding soils or other materials;

(III) The mobilizing properties of other materials co-disposed with these wastes; and

(IV) The effectiveness of additional treatment, design, or monitoring techniques.

5. Specific Part B Information Requirements for Incinerators [40 CFR 270.19]

Except as Rule 1200-01-11-.06(15)(a) and subpart (v) of this part provide otherwise, owners and operators of facilities that incinerate hazardous waste must fulfill the requirements of subparts (i),(ii), or (iii) of this part.

(i) When seeking an exemption under Rule 1200-01-11-.06(15)(a)(ii) or (iii) (Ignitable, corrosive, or reactive wastes only):

(I) Documentation that the waste is listed as a hazardous waste in Rule 1200-01-11-.02(4), because it is ignitable (Hazard Code I) or corrosive (Hazard Code C) or both; or

(II) Documentation that the waste is listed as a hazardous waste in Rule 1200-01-11-.02(4), solely because it is reactive (Hazard Code R) for characteristics other than those listed in Rule 1200-01-11-.02(3)(d)1(iv) and (v), and will not be burned when other hazardous wastes are present in the combustion zone; or

(III) Documentation that the waste is a hazardous waste solely because it possesses the characteristic of ignitability, corrosivity,

or both, as determined by the tests for characteristics of hazardous waste under Rule 1200-01-11-.02(3); or

(IV) Documentation that the waste is a hazardous waste solely because it possesses the reactivity characteristics listed in Rule 1200-01-11-.02(3)(d)1(i), (ii), (iii), (vi), (vii), or (viii), and that it will not be burned when other hazardous wastes are present in the combustion zone; or

(ii) Submit a trial burn plan or the results of a trial burn, including all required determinations, in accordance with subparagraph (1)(e) of this Rule; or

(iii) In lieu of a trial burn, the applicant may submit the following information:

(I) An analysis of each waste or mixture of wastes to be burned including:

I. Heat value of the waste in the form and composition in which it will be burned.

II. Viscosity (if applicable), or description of physical form of the waste.

III. An identification of any hazardous organic constituents listed in Rule 1200-01-11-.02, Appendix VIII, which are present in the waste to be burned, except that the applicant need not analyze for constituents listed in Rule 1200-01-11-.02, Appendix VIII, which would reasonably not be expected to be found in the waste. The constituents excluded from analysis must be identified and the basis for their exclusion stated. The waste analysis must rely on appropriate analytical techniques.

IV. An approximate quantification of the hazardous constituents identified in the waste, within the precision produced by appropriate analytical methods.

V. A quantification of those hazardous constituents in the waste which may be designated as POHC's based on data submitted from other trial or operational burns which demonstrate compliance with the performance standards in Rule 1200-01-11-.06(15)(d).

(II) A detailed engineering description of the incinerator, including:

I. Manufacturer's name and model number of incinerator.

II. Type of incinerator.

III. Linear dimension of incinerator unit including cross sectional area of combustion chamber.

IV. Description of auxiliary fuel system (type/feed).

V. Capacity of prime mover.

VI. Description of automatic waste feed cutoff system(s).

VII. Stack gas monitoring and pollution control monitoring system.

VIII. Nozzle and burner design.

IX. Construction materials.

X. Location and description of temperature, pressure, and flow indicating devices and control devices.

(III) A description and analysis of the waste to be burned compared with the waste for which data from operational or trial burns are provided to support the contention that a trial burn is not needed. The data should include those items listed in item (iii)(I) of this part. This analysis should specify the POHC's which the applicant has identified in the waste for which a permit is sought, and any differences from the POHC's in the waste for which burn data are provided.

(IV) The design and operating conditions of the incinerator unit to be used, compared with that for which comparative burn data are available.

(V) A description of the results submitted from any previously conducted trial burn(s) including:

I. Sampling and analysis techniques used to calculate performance standards in Rule 1200-01-11-.06(15)(d), and

II. Methods and results of monitoring temperatures, waste feed rates, carbon monoxide, and an appropriate indicator of combustion gas velocity (including a statement concerning the precision and accuracy of this measurement).

(VI) The expected incinerator operation information to demonstrate compliance with Rule 1200-01-11-.06(15)(d) and (15)(f) including:

I. Expected carbon monoxide (CO) level in the stack exhaust gas.

II. Waste feed rate.

III. Combustion zone temperature.

IV. Indication of combustion gas velocity.

V. Expected stack gas volume, flow rate, and temperature.

VI. Computed residence time for waste in the combustion zone.

VII. Expected hydrochloric acid removal efficiency.

VIII. Expected fugitive emissions and their control procedures.

IX. Proposed waste feed cut-off limits based on the identified significant operating parameters.

(VII) Such supplemental information as the Commissioner finds necessary to achieve the purposes of this subpart.

(VIII) Waste analysis data, including that submitted in item (iii)(I) of this part, sufficient to allow the Commissioner to specify as permit Principal Organic Hazardous Constituents (permit POHC's) those constituents for which destruction and removal efficiencies will be required.

(iv) The Commissioner shall approve a permit application without a trial burn if he finds that:

(I) The wastes are sufficiently similar; and

(II) The incinerator units are sufficiently similar, and the data from other trial burns are adequate to specify (under Rule 1200-01-11-.06(15)(f)) operating conditions that will ensure that the performance standards in Rule 1200-01-11-.06(15)(d) will be met by the incinerator.

(v) When an owner or operator of a hazardous waste incineration unit becomes subject to RCRA permit requirements after October 12, 2005, or when an owner or operator of an existing hazardous waste incineration unit demonstrates compliance with the air emission standards and limitations in 40 CFR 63 Subpart EEE (i.e., by conducting a comprehensive performance test and submitting a Notification of Compliance under 40 CFR 63.1207(j) and 63.1210(d) documenting compliance with all applicable requirements of 40 CFR 63 Subpart EEE), the requirements of this part do not apply, except those provisions the Commissioner determines are necessary to ensure compliance with parts (15)(f) 1 and 3 of Rule 1200-01-11-.06 if you elect to comply with subpart (12)(a)1(i)(I) of this Rule to minimize emissions of toxic compounds from startup, shutdown, and malfunction events. Nevertheless, the Commissioner may apply the provisions of this part, on a case-by-case basis, for purposes of information collection in accordance with subparagraphs (2)(g) and (2)(h) and subparts (8)(b)2(ii) and (8)(b)2(iii) of this Rule.

6. Specific Part B Information Requirements for Land Treatment Facilities [40 CFR 270.20]

Except as otherwise provided in Rule 1200-01-11-.06(1)(b), owners and operators of facilities that use land treatment to dispose of hazardous waste must provide the following additional information:

(i) A description of plans to conduct a treatment demonstration as required under Rule 1200-01-11-.06(13)(c). The description must include the following information:

(I) The wastes for which the demonstration will be made and the potential hazardous constituents in the waste;

(II) The data sources to be used to make the demonstration (e.g., literature, laboratory data, field data, or operating data);

(III) Any specific laboratory or field test that will be conducted, including:

I. The type of test (e.g., column leaching, degradation);

II. Materials and methods, including analytical procedures;

III. Expected time for completion;

IV. Characteristics of the unit that will be simulated in the demonstration, including treatment zone characteristics, climatic conditions, and operating practices;

(ii) A description of a land treatment program, as required under Rule 1200-01-11-.06(13)(b). This information must be submitted with the plans for the treatment demonstration, and updated following the treatment demonstration. The land treatment program must address the following items:

(I) The wastes to be land treated;

(II) Design measures and operating practices necessary to maximize treatment in accordance with Rule 1200-01-11-.06(13)(d)1 including:

I. Waste application method and rate;

II. Measures to control soil pH;

III. Enhancement of microbial or chemical reactions;

IV. Control of moisture content;

(III) Provisions for unsaturated zone monitoring, including:

I. Sampling equipment, procedures, and frequency;

II. Procedures for selecting sampling locations;

III. Analytical procedures;

IV. Chain of custody control;

V. Procedures for establishing background values;

VI. Statistical methods for interpreting results;

VII. The justification for any hazardous constituents recommended for selection as principal hazardous

constituents, in accordance with the criteria for such selection in Rule 1200-01-11-.06(13)(i)1;

(IV) A list of hazardous constituents reasonably expected to be in, or derived from, the wastes to be land treated based on waste analysis performed pursuant to Rule 1200-01-11-.06(2)(d);

(V) The proposed dimensions of the treatment zone;

(iii) A description of how the unit is or will be designed, constructed, operated, and maintained in order to meet the requirements of Rule 1200-01-11-.06(13)(d). This submission must address the following items:

(I) Control of run-on;

(II) Collection and control of run-off;

(III) Minimization of run-off of hazardous constituents from the treatment zone;

(IV) Management of collection and holding facilities associated with run-on and run-off control systems;

(V) Periodic inspection of the unit. This information should be included in the inspection plan submitted under subpart (5)(a)1(v) of this Rule;

(VI) Control of wind dispersal of particulate matter, if applicable;

(iv) If food-chain crops are to be grown in or on the treatment zone of the land treatment unit, a description of how the demonstration required under Rule 1200-01-11-.06(13)(g)1 will be conducted including:

(I) Characteristics of the food-chain crop for which the demonstration will be made;

(II) Characteristics of the waste, treatment zone, and waste application method and rate to be used in the demonstration;

(III) Procedures for crop growth, sample collection, sample analysis, and data evaluation;

(IV) Characteristics of the comparison crop including the location and conditions under which it was or will be grown;

(v) If food-chain crops are to be grown, and cadmium is present in the land-treated waste, a description of how the requirements of Rule 1200-01-11-.06(13)(g)2 will be complied with;

(vi) A description of the vegetative cover to be applied to closed portions of the facility, and a plan for maintaining such cover during the post-closure care period, as required under Rule 1200-01-11-.06(13)(k)1(viii) and Rule 1200-01-11-.06(13)(k)3(ii). This information should be included in the closure plan and, where applicable, the post-closure care plan submitted under subpart (5)(a)1(xiii) of this Rule;

(vii) If ignitable or reactive wastes will be placed in or on the treatment zone, an explanation of how the requirements of Rule 1200-11-.06(13)(l) will be complied with;

(viii) If incompatible wastes, or incompatible wastes and materials, will be placed in or on the same treatment zone, an explanation of how Rule 1200-01-11-.06(13)(m) will be complied with;

(ix) A waste management plan for Hazardous Waste Codes F020, F021, F022, F023, F026, and F027 describing how a land treatment facility is or will be designed, constructed, operated, and maintained to meet the requirements of Rule 1200-01-11-.06(13)(n). This submission must address the following items as specified in Rule 1200-01-11-.06(13)(n):

(I) The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

(II) The attenuative properties of underlying and surrounding soils or other materials;

(III) The mobilizing properties of other materials co-disposed with these wastes; and

(IV) The effectiveness of additional treatment, design, or monitoring techniques.

7. Specific Part B Information Requirements for Landfills [40 CFR 270.21]

Except as otherwise provided in Rule 1200-01-11-.06(1)(b) or (d), owners and operators of facilities that dispose of hazardous waste in landfills must provide the following additional information:

(i) A list of the hazardous wastes placed or to be placed in each landfill or landfill cell;

(ii) Detailed plans and an engineering report describing how the landfill is designed and is or will be constructed, operated, and maintained to meet the requirements of Rule 1200-01-11-.06(2)(j), (14)(b), (14)(c), and (14)(d), addressing the following items:

(I) I. The liner system (except for an existing portion of a landfill), if the landfill must meet the requirements of Rule 1200-01-11-.06(14)(b)1. If an exemption from the requirement for a liner is sought as provided by Rule 1200-01-11-.06(14)(b)2, submit detailed plans, and engineering and hydrogeological reports, as appropriate, describing alternate designs and operating practices that will, in conjunction with location aspects, prevent the migration of any hazardous constituents into the ground water or surface water at any future time;

II. The double liner and leak (leachate) detection, collection, and removal system, if the landfill must meet the requirements of Rule 1200-01-11-.06(14)(b)3. If an

exemption from the requirements for double liners and a leak detection, collection, and removal system or alternative design is sought as provided by Rule 1200-01-11-.06(14)(b)4, 5, or 6, submit appropriate information;

III. If the leak detection system is located in a saturated zone, submit detailed plans and an engineering report explaining the leak detection system design and operation, and the location of the saturated zone in relation to the leak detection system;

IV. The construction quality assurance (CQA) plan if required under Rule 1200-01-11-.06(2)(j);

V. Proposed action leakage rate, with rationale, if required under Rule 1200-01-11-.06(14)(c), and response action plan, if required under Rule 1200-01-11-.06(14)(d);

(II) Control of run-on;

(III) Control of run-off;

(IV) Management of collection and holding facilities associated with run-on and run-off control systems; and

(V) Control of wind dispersal of particulate matter, where applicable;

(iii) A description of how each landfill, including the double liner system, leachate collection and removal system, leak detection system, cover system, and appurtenances for control of run-on and run-off, will be inspected in order to meet the requirements of Rule 1200-01-11-.06(14)(d)1, 2, and 3. This information must be included in the inspection plan submitted under subpart (5)(a)1(v) of this Rule;

(iv) A description of how each landfill, including the liner and cover systems, will be inspected in order to meet the requirements of Rule 1200-01-11-.06(14)(d)1 and 2. This information should be included in the inspection plan submitted under subpart (5)(a)1(v) of this Rule;

(v) Detailed plans and an engineering report describing the final cover which will be applied to each landfill or landfill cell at closure in accordance with Rule 1200-01-11-.06(14)(k)1, and a description of how each landfill will be maintained and monitored after closure in accordance with Rule 1200-01-11-.06(14)(k). This information should be included in the closure and post-closure plans submitted under subpart (5)(a)1(xiii) of this Rule;

(vi) If ignitable or reactive wastes will be landfilled, an explanation of how the standards of Rule 1200-01-11-.06(14)(m) will be complied with;

(vii) If incompatible wastes, or incompatible wastes and materials, will be landfilled, an explanation of how Rule 1200-01-11-.06(14)(n) will be complied with;

(viii) If bulk or non-containerized liquid waste or wastes containing free liquids is to be landfilled prior to May 8, 1985, an explanation of how the requirements of Rule 1200-01-11-.06(14)(o) will be complied with;

(ix) If containers of hazardous waste are to be landfilled, an explanation of how the requirements of Rule 1200-01-11-.06(14)(p) or (14)(q), as applicable, will be complied with;

(x) A waste management plan for Hazardous Waste Codes F020, F021, F022, F023, F026, and F027 describing how a landfill is or will be designed, constructed, operated, and maintained to meet the requirements of Rule 1200-01-11-.06(14)(r). This submission must address the following items as specified in Rule 1200-01-11-.06(14(r):

(I) The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

(II) The attenuative properties of underlying and surrounding soils or other materials;

(III) The mobilizing properties of other materials co-disposed with these wastes; and

(IV) The effectiveness of additional treatment, design, or monitoring techniques.

8. Specific Part B Information Requirements for Boilers and Industrial Furnaces Burning Hazardous Waste [40 CFR 270.22]

When an owner or operator of a cement kiln, lightweight aggregate kiln, solid fuel boiler, liquid fuel boiler, or hydrochloric acid production furnace becomes subject to RCRA permit requirements after October 12, 2005, or when an owner or operator of an existing cement kiln, lightweight aggregate kiln, solid fuel boiler, liquid fuel boiler, or hydrochloric acid production furnace demonstrates compliance with the air emission standards and limitations in 40 CFR 63 Subpart EEE (i.e., by conducting a comprehensive performance test and submitting a Notification of Compliance under 40 CFR 63.1207(j) and 63.1210(d) documenting compliance with all applicable requirements of 40 CFR Subpart EEE the requirements of this subparagraph do not apply. The requirements of this subparagraph do apply, however, if the Commissioner determines certain provisions are necessary to ensure compliance with subpart (8)(c)5(i) and item (8)(c)5(ii)(III) of Rule 1200-01-11.-.09 if you elect to comply with subpart (12)(a)1(i)(I) of this Rule to minimize emissions of toxic compounds from startup, shutdown, and malfunction events; or if you are an area source and elect to comply with the subparagraphs (8)(f), (8)(g), and (8)(h) of Rule 1200-01-11-.09 standards and associated requirements for particulate matter, hydrogen chloride and chlorine gas, and non-mercury metals; or the Commissioner determines certain provisions apply, on a case-by-case basis, for purposes of information collection in accordance with subparagraphs (2)(g) and (2)(h) and subparts (8)(b)2(ii) and (8)(b)2(iii) of this Rule. Nevertheless, the Commissioner may apply the provisions of this part, on a case-by-case basis, for purposes of information collection in accordance with subparagraph (2)(g) and subpart (8)(b)2(ii) of this Rule.

(i) Trial Burns

(I) General

Except as provided below, owners and operators that are subject to the standards to control organic emissions provided by Rule 1200-01-11-.09(8)(e), standards to control particulate matter provided by Rule 1200-01-11-.09(8)(f), standards to control metals emissions provided by Rule 1200-01-11-.09(8)(g), or standards to control hydrogen chloride or chlorine gas emissions provided by Rule 1200-01-11-.09(8)(h) must conduct a trial burn to demonstrate conformance with those standards and must submit a trial burn plan or the results of a trial burn, including all required determinations, in accordance with subparagraph (1)(j) of this Rule:

I. A trial burn to demonstrate conformance with a particular emission standard may be waived under provisions of Rules 1200-01-11-.09(8)(e) through (8)(h) and items (i)(II) through (i)(V) of this part; and

II. The owner or operator may submit data in lieu of a trial burn, as prescribed in item (i)(VI) of this part.

(II) Waiver of trial burn for DRE

I. Boilers operated under special operating requirements. When seeking to be permitted under Rules 1200-01-11-.09(8)(e)1(iv) and (8)(k) that automatically waive the DRE trial burn, the owner or operator of a boiler must submit documentation that the boiler operates under the special operating requirements provided by Rule 1200-01-11-.09(8)(k).

II. Boilers and industrial furnaces burning low risk waste. When seeking to be permitted under the provisions for low risk waste provided by Rules 1200-01-11-.09(8)(e)1(v) and (8)(j) that waive the DRE trial burn, the owner or operator must submit:

A. Documentation that the device is operated in conformance with the requirements of Rule 1200-01-11-.09(8)(j)1(i).

B. Results of analyses of each waste to be burned, documenting the concentrations of nonmetal compounds listed in Appendix VIII of Rule 1200-01-11-.02, except for those constituents that would reasonably not be expected to be in the waste. The constituents excluded from analysis must be identified and the basis for their exclusion explained. The analysis must rely on appropriate analytical techniques.

C. Documentation of hazardous waste firing rates and calculations of reasonable, worst-case emission rates of each constituent identified in

section (i)(II)II B of this part using procedures provided by Rule 1200-01-11-.09(8)(j)1(ii)(II).

D. Results of emissions dispersion modeling for emissions identified in section (i)(II)II C of this part using modeling procedures prescribed by Rule 1200-01-11-.09(8)(g)8. The Commissioner will review the emission modeling conducted by the applicant to determine conformance with these procedures. The Commissioner will either approve the modeling or determine that alternate or supplementary modeling is appropriate.

E. Documentation that the maximum annual average ground level concentration of each constituent identified in section (i)(II)II B of this part quantified in conformance with section (i)(II)II D of this part does not exceed the allowable ambient level established in Appendix IV or V of Rule 1200-01-11-.09(30). The acceptable ambient concentration for emitted constituents for which a specific Reference Air Concentration has not been established in Appendix IV or Risk-Specific Dose has not been established in Appendix V is 0.1 micrograms per cubic meter, as noted in the footnote to Appendix IV.

(III) Waiver of trial burn for metals

When seeking to be permitted under the Tier I (or adjusted Tier I) metals feed rate screening limits provided by Rule 1200-01-11-.09(8)(g)2 and 5 that control metals emissions without requiring a trial burn, the owner or operator must submit:

I. Documentation of the feed rate of hazardous waste, other fuels, and industrial furnace feed stocks;

II. Documentation of the concentration of each metal controlled by Rule 1200-01-11-.09(8)(g)2 or 5 in the hazardous waste, other fuels, and industrial furnace feedstocks, and calculations of the total feed rate of each metal;

III. Documentation of how the applicant will ensure that the Tier I feed rate screening limits provided by Rule 1200-01-11-.09(8)(g)2 or 5 will not be exceeded during the averaging period provided by that subparagraph;

IV. Documentation to support the determination of the terrain-adjusted effective stack height, good engineering practice stack height, terrain type, and land use as provided by Rule 1200-01-11-.09(8)(g)2(iii) through 2(v);

V. Documentation of compliance with the provisions of Rule 1200-01-11-.09(8)(g)2(vi), if applicable, for facilities with multiple stacks;

VI. Documentation that the facility does not fail the criteria provided by Rule 1200-01-11-.09(8)(g)2(vii) for eligibility to comply with the screening limits; and

VII. Proposed sampling and metals analysis plan for the hazardous waste, other fuels, and industrial furnace feed stocks.

(IV) Waiver of trial burn for particulate matter

When seeking to be permitted under the low risk waste provisions of Rule 1200-01-11-.09(8)(j)2 which waives the particulate standard (and trial burn to demonstrate conformance with the particulate standard), applicants must submit documentation supporting conformance with subitem (i)(II)II and item (i)(III) of this part.

(V) Waiver of trial burn for HCl and Cl_2

When seeking to be permitted under the Tier I (or adjusted Tier I) feed rate screening limits for total chloride and chlorine provided by Rule 1200-01-11-.09(8)(h)2(i) and 5 that control emissions of hydrogen chloride (HCl) and chlorine gas (Cl_2) without requiring a trial burn, the owner or operator must submit:

I. Documentation of the feed rate of hazardous waste, other fuels, and industrial furnace feed stocks;

II. Documentation of the levels of total chloride and chlorine in the hazardous waste, other fuels, and industrial furnace feedstocks, and calculations of the total feed rate of total chloride and chlorine;

III. Documentation of how the applicant will ensure that the Tier I (or adjusted Tier I) feed rate screening limits provided by Rule 1200-01-11-.09(8)(h)2(i) or 5 will not be exceeded during the averaging period provided by that subparagraph;

IV. Documentation to support the determination of the terrain-adjusted effective stack height, good engineering practice stack height, terrain type, and land use as provided by Rule 1200-01-11-.09(8)(h)2(iii);

V. Documentation of compliance with the provisions of Rule 1200-01-11-.09(8)(h)2(iv), if applicable, for facilities with multiple stacks;

VI. Documentation that the facility does not fail the criteria provided by Rule 1200-01-11-.09(8)(h)2(iii) for eligibility to comply with the screening limits; and

VII. Proposed sampling and analysis plan for total chloride and chlorine for the hazardous waste, other fuels, and industrial furnace feedstocks.

(VI) Data in lieu of trial burn

The owner or operator may seek an exemption from the trial burn requirements to demonstrate conformance with Rules 1200-01-11-.09(8)(e) through (8)(h) and subparagraph (1)(j) of this Rule by providing the information required by subparagraph (1)(j) of this Rule from previous compliance testing of the device in conformance with Rule 1200-01-11-.09(8)(d), or from compliance testing or trial or operational burns of similar boilers or industrial furnaces burning similar hazardous wastes under similar conditions. If data from a similar device is used to support a trial burn waiver, the design and operating information required by subparagraph (1)(j) of this Rule must be provided for both the similar device and the device to which the data is to be applied, and a comparison of the design and operating information must be provided. The Commissioner shall approve a permit application without a trial burn if he finds that the hazardous wastes are sufficiently similar, the devices are sufficiently similar, the operating conditions are sufficiently similar, and the data from other compliance tests, trial burns, or operational burns are adequate to specify (under Rule 1200-01-11-.09(8)(c)) operating conditions that will ensure conformance with Rule 1200-01-11-.09(8)(c)3. In addition, the following information shall be submitted:

I. For a waiver from any trial burn:

A. A description and analysis of the hazardous waste to be burned compared with the hazardous waste for which data from compliance testing, or operational or trial burns are provided to support the contention that a trial burn is not needed;

B. The design and operating conditions of the boiler or industrial furnace to be used, compared with that for which comparative burn data are available; and

C. Such supplemental information as the Commissioner finds necessary to achieve the purposes of this item.

II. For a waiver of the DRE trial burn, the basis for selection of POHCs used in the other trial or operational burns which demonstrate compliance with the DRE performance standard in Rule 1200-01-11-.09(8)(e)1. This analysis should specify the constituents in Appendix VIII of Rule 1200-01-11-.02(5), that the applicant has identified in the hazardous waste for which a permit is sought, and any differences from the POHCs

in the hazardous waste for which burn data are provided.

(ii) Alternative HC limit for Industrial Furnaces with Organic Matter in Raw Materials

Owners and operators of industrial furnaces requesting an alternative HC limit under Rule 1200-01-11-.09(8)(e)6 shall submit the following information at a minimum:

(I) Documentation that the furnace is designed and operated to minimize HC emissions from fuels and raw materials;

(II) Documentation of the proposed baseline flue gas HC (and CO) concentration, including data on HC (and CO) levels during tests when the facility produced normal products under normal operating conditions from normal raw materials while burning normal fuels and when not burning hazardous waste;

(III) Test burn protocol to confirm the baseline HC (and CO) level including information on the type and flow rate of all feedstreams, point of introduction of all feedstreams, total organic carbon content (or other appropriate measure of organic content) of all nonfuel feedstreams, and operating conditions that affect combustion of fuel(s) and destruction of hydrocarbon emissions from nonfuel sources;

(IV) Trial burn plan to:

I. Demonstrate that flue gas HC (and CO) concentrations when burning hazardous waste do not exceed the baseline HC (and CO) level; and

II. Identify the types and concentrations of organic compounds listed in Appendix VIII of Rule 1200-01-11-.02(5), that are emitted when burning hazardous waste in conformance with procedures prescribed by the Commissioner;

(V) Implementation plan to monitor over time changes in the operation of the facility that could reduce the baseline HC level and procedures to periodically confirm the baseline HC level; and

(VI) Such other information as the Commissioner finds necessary to achieve the purposes of this subpart.

(iii) Alternative Metals Implementation Approach

When seeking to be permitted under an alternative metals implementation approach under Rule 1200-01-11-.09(8)(g)6, the owner or operator must submit documentation specifying how the approach ensures compliance with the metals emissions standards of Rule 1200-01-11-.09(8)(g)3 or 4 and how the approach can be effectively implemented and monitored. Further, the owner or operator shall provide

such other information that the Commissioner finds necessary to achieve the purposes of this subpart.

(iv) Automatic Waste Feed Cutoff System

Owners and operators shall submit information describing the automatic waste feed cutoff system, including any pre-alarm systems that may be used.

(v) Direct Transfer

Owners and operators that use direct transfer operations to feed hazardous waste from transport vehicles (containers, as defined in Rule 1200-01-11-.09(8)(l) directly to the boiler or industrial furnace shall submit information supporting conformance with the standards for direct transfer provided by Rule 1200-01-11-.09(8)(l).

(vi) Residues

Owners and operators that claim that their residues are excluded from regulation under the provisions of Rule 1200-01-11-.09(8)(m) must submit information adequate to demonstrate conformance with those provisions.

9. Specific Part B Information Requirements for Miscellaneous Units [40 CFR 270.23]

Except as otherwise provided in Rule 1200-01-11-.06(27)(a), owners and operators of facilities that treat, store, or dispose of hazardous waste in miscellaneous units must provide the following additional information:

(i) A detailed description of the unit being used or proposed for use, including the following:

(I) Physical characteristics, materials of construction, and dimensions of the unit;

(II) Detailed plans and engineering reports describing how the unit will be located, designed, constructed, operated, maintained, monitored, inspected, and closed to comply with the requirements of Rule 1200-01-11-.06(27)(b) and (c); and

(III) For disposal units, a detailed description of the plans to comply with the post-closure requirements of Rule 1200-01-11-.06(27)(d).

(ii) Detailed hydrologic, geologic, and meteorologic assessments and land-use maps for the region surrounding the site that address and ensure compliance of the unit with each factor in the environmental performance standards of Rule 1200-01-11-.06(27)(b). If the applicant can demonstrate that he does not violate the environmental performance standards of Rule 1200-01-11-.06(27)(b) and the Commissioner agrees with such demonstration, preliminary hydrologic, geologic, and meteorologic assessments will suffice.

(iii) Information on the potential pathways of exposure of humans or environmental receptors to hazardous waste or hazardous constituents and on the potential magnitude and nature of such exposures.

(iv) For any treatment unit, a report on a demonstration of the effectiveness of the treatment based on laboratory or field data.

(v) Any additional information determined by the Commissioner to be necessary for evaluation of compliance of the unit with the environmental performance standards of Rule 1200-01-11.06(27)(b).

10. Specific Part B information requirements for process vents [40 CFR 270.24]

Except as otherwise provided in Rule 1200-01-11-.06(1)(b), owners and operators of facilities that have process vents to which Rule 1200-11-.06(30) applies must provide the following additional information:

(i) For facilities that cannot install a closed-vent system and control device to comply with the provisions of Rule 1200-01-11-.06(30) on the effective date that the facility becomes subject to the provisions of Rule 1200-01-11-.06 or Rule 1200-01-11-.05(27), an implementation schedule as specified in Rule 1200-01-11-.06(30)(d)1(ii).

(ii) Documentation of compliance with the process vent standards in Rule 1200-01-11-.06(30)(c), 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).

(II) Information and data supporting estimates of vent emissions and emission reduction achieved by add-on control devices based on engineering calculations or source tests. For the purpose of determining compliance, estimates of vent emissions and emission reductions must be made using operating parameter values (e.g., temperatures, flow rates, or concentrations) that represent the conditions that exist when the waste management unit is operating at the highest load or capacity level reasonably expected to occur.

(III) Information and data used to determine whether or not a process vent is subject to the requirements of Rule 1200-01-11-.06(30(c).

(iii) Where an owner or operator applies for permission to use a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system to comply with the requirements of Rule 1200-01-11-.06(30)(c), and chooses to use test data to determine the organic removal efficiency or the total organic compound concentration achieved by the control device, a performance test plan as specified in Rule 1200-01-11-.06(30)(f)2(iii).

(iv) Documentation of compliance with Rule 1200-01-11-.06(30)(d), including:

(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 Rule 1200-01-11-.06(30)(d)11.

(III) 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(2)(b)) or other engineering texts acceptable to the Commissioner that present basic control device information. The design analysis shall address the vent stream characteristics and control device operation parameters as specified in Rule 1200-01-11-.06(30)(f)2(iv)(III).

(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 weight percent or greater unless the total organic emission limits of Rule 1200-01-11-.06(30)(c)1 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.

11. Specific Part B Information Requirements for Equipment [40 CFR 270.25]

Except as otherwise provided in Rule 1200-01-11-.06(1)(b), owners and operators of facilities that have equipment to which Rule 1200-01-11-.06(31) applies must provide the following additional information:

(i) For each piece of equipment to which Rule 1200-01-11-.06(31) 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 cannot install a closed-vent system and control device to comply with the provisions of Rule 1200-01-11-.06(31) on the effective date that the facility becomes subject to the provisions of Rule 1200-01-11-.06 or Rule 1200-01-11-.05(28), an implementation schedule as specified in Rule 1200-01-11-.06(30)(d)1(ii).

(iii) Where an owner or operator applies for permission to use a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system and chooses to use test data to determine the organic removal efficiency or the total organic compound concentration achieved by the control device, a performance test plan as specified in Rule 1200-01-11-.06(30)(f)2(iii).

(iv) Documentation that demonstrates compliance with the equipment standards in Rules 1200-01-11-.06(31)(c) to (31)(j). This documentation shall contain the records required under Rule 1200-01-11-.06(31)(o). The Commissioner may request further documentation before deciding if compliance has been demonstrated.

(v) Documentation to demonstrate compliance with Rule 1200-01-11-.06(31)(k) 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 Rule 1200-01-11-.06(30)(d)10.

(III) A design analysis, specifications, drawings, schematics, and piping and instrumentation diagrams based on the appropriate sections of "ATPI Course 415: Control of Gaseous Emissions" (listed in Rule 1200-01-11-.01(2)(b)) or other engineering texts acceptable to the Commissioner that present basic control device information. The design analysis shall address the vent stream characteristics and control device operation parameters as specified in Rule 1200-01-11-.06(30)(f)2(iv)(III).

(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 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 weight percent or greater.

12. Special Part B Information Requirements for Drip Pads [40 CFR 270.26]

Except as otherwise provided by Rule 1200-01-11-.06(1)(a) and (b), owners and operators of hazardous waste treatment, storage, or disposal facilities that collect, store, or treat hazardous waste on drip pads must provide the following additional information:

(i) A list of hazardous wastes placed or to be placed on each drip pad.

(ii) If an exemption is sought to Rule 1200-01-11-.06(6), as provided by Rule 1200-01-11-.06(6)(a), detailed plans and an engineering report describing how the requirements of Rule 1200-01-11-.06(6)(a)2(ii) will be met.

(iii) Detailed plans and an engineering report describing how the drip pad is or will be designed, constructed, operated and maintained to meet the requirements of Rule 1200-01-11-.06(26)(d), including the as-built drawings and specifications. This submission must address the following items as specified in Rule 1200-01-11-.06(26)(b):

(I) The design characteristics of the drip pad;

(II) The liner system;

(III) The leakage detection system, including the leak detection system and how it is designed to detect the failure of the drip pad or the presence of any releases of hazardous waste or accumulated liquid at the earliest practicable time;

(IV) Practices designed to maintain drip pads;

(V) The associated collection system;

(VI) Control of run-on to the drip pad;

(VII) Control of run-off from the drip pad;

(VIII) The interval at which drippage and other materials will be removed from the associated collection system and a statement demonstrating that the interval will be sufficient to prevent overflow onto the drip pad;

(IX) Procedures for cleaning the drip pad at least once every seven days to ensure the removal of any accumulated residues of waste or other materials, including but not limited to rinsing, washing with detergents or other appropriate solvents, or steam cleaning and provisions for documenting the date, time, and cleaning procedure used each time the pad is cleaned;

(X) Operating practices and procedures that will be followed to ensure that tracking of hazardous waste or waste constituents off the drip pad due to activities by personnel or equipment is minimized;

(XI) Procedures for ensuring that, after removal from the treatment vessel, treated wood from pressure and non-pressure processes is held on the drip pad until drippage has ceased, including recordkeeping practices;

(XII) Provisions for ensuring that collection and holding units associated with the run-on and run-off control systems are emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system;

(XIII) If treatment is carried out on the drip pad, details of the process equipment used, and the nature and quality of the residuals;

(XIV) A description of how each drip pad, including appurtenances for control of run-on and run-off, will be inspected in order to meet the requirements of Rule 1200-01-11-.06(26)(d). This information should be included in the inspection plan submitted under subpart (5)(a)1(v) of this Rule;

(XV) A certification signed by a qualified Professional Engineer, stating that the drip pad design meets the requirements of parts 1 through 6 of Rule 1200-01-11-.06(26)(d); and

(XVI) A description of how hazardous waste residues and contaminated materials will be removed from the drip pad at closure, as required under Rule 1200-01-11-.06(26)(f)1. For any waste not to be removed from the drip pad upon closure, the owner or operator must submit detailed plans and an engineering report describing how Rule 1200-01-11-.06(14)(k)1 and 2 will be complied with. This information should be included in the closure plan and, where applicable, the post-closure plan submitted under subpart (5)(a)1(xiii) of this Rule.

13. Specific Part B Information Requirements for Air Emission Controls for Tanks, Surface Impoundments, and Containers [40 CFR 270.27]

(i) Except as otherwise provided in Rule 1200-01-11-.06(1)(b), owners and operators of tanks, surface impoundments, or containers that use air emission controls in accordance with the requirements of Rule 1200-01-11-.06(32) shall provide the following additional information:

(I) Documentation for each floating roof cover installed on a tank subject to Rule 1200-01-11-.06(32)(e)4(i) or (ii) 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 applicable design specifications as listed in Rule 1200-01-11-.06(32)(e)5(i) or 6(i).

(II) Identification of each container area subject to the requirements of Rule 1200-01-11-.06(32) and certification by the owner or operator that the requirements of this paragraph are met.

(III) Documentation for each enclosure used to control air pollutant emissions from tanks or containers in accordance with the requirements of Rule 1200-01-11-.06(32)(e)4(v) or .06(32)(g)5(i)(II) that includes records for he 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.

(IV) Documentation for each floating membrane cover installed on a surface impoundment in accordance with the requirements of Rule 1200-01-11-.06(32)(f)3 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 Rule 1200-01-11-.06(32)(f)3(i).

(V) Documentation for each closed-vent system and control device installed in accordance with the requirements of Rule 1200-01-11-.06(32)(h) that includes design and performance information as specified in subpart 10(iii) and (iv) of this subparagraph.

(VI) An emission monitoring plan for both Method 21 in 40 CFR part 60, appendix A and control device monitoring methods. This plan shall include the following information: monitoring point(s), monitoring methods for control devices, monitoring frequency, procedures for documenting exceedances, and procedures for mitigating noncompliances.

(VII) When an owner or operator of a facility subject to Rule 1200-01-11-.05(29) cannot comply with Rule 1200-01-11-.06(32) by the date of permit issuance, the schedule of implementation required under Rule 1200-01-11-.05(29)(c).

14. Part B Information Requirements for Post-Closure Permits [270.28]

For post-closure permits, the owner or operator is required to submit only the information specified in subparts (a)1(i), (iv), (v), (vi), (xi), (xiii), (xiv), (xvi), (xviii), (xix), subparagraphs (c) and (e), and part (a)2 of this paragraph, unless the Commissioner determines that additional information from subparagraph (a), parts (b)2, (b)3, (b)4, (b)6, or (b)7 of this paragraph is necessary. The owner or operator is required to submit the same information when an alternative authority is used in lieu of a post-closure permit as provided in part (1)(b)9 of this Rule.

(c) Additional Information Requirements [40 CFR 270.14(c)]

The following additional information regarding protection of groundwater is required from owners or operators of hazardous waste facilities containing a regulated unit except as provided in Rule 1200-01-11-.06(6)(a):

1. A summary of the ground-water monitoring data obtained during the interim status period under Rule 1200-01-11-.05(6)(a) through (e), where applicable.

2. Identification of the uppermost aquifer and aquifers hydraulically interconnected beneath the facility property, including ground-water flow direction and rate, and the basis for such identification (i.e., the information obtained from hydrogeologic investigations of the facility area).

3. On the topographic map required under subpart (a)1(xix) of this paragraph, a delineation of the waste management area, the property boundary, the proposed "point of compliance" as defined under Rule 1200-01-11-.06(6)(f), the proposed location of ground-water monitoring wells as required under Rule 1200-01-11-.06(6)(h), and, to the extent possible, the information required in part 2 of this subparagraph.

4. A description of any plume of contamination that has entered the ground water from a regulated unit at the time that the application was submitted that:

(i) Delineates the extent of the plume on the topographic map required under subpart (a)1(xix) of this paragraph; and

(ii) Identifies the concentration of each Appendix IX, of Rule 1200-01-11-.06, constituent throughout the plume or identifies the maximum concentrations of each appendix IX constituent in the plume.

5. Detailed plans and an engineering report describing the proposed ground water monitoring program to be implemented to meet the requirements of Rule 1200-01-11-.06(6)(h).

6. If the presence of hazardous constituents has not been detected in the ground water at the time of permit application, the owner or operator must submit sufficient information, supporting data, and analyses to establish a detection monitoring program which meets the requirements of Rule 1200-01-11-.06(6)(i). This submission must address the following items specified under Rule 1200-01-11-.06(6)(i):

(i) A proposed list of indicator parameters, waste constituents, or reaction products that can provide a reliable indication of the presence of hazardous constituents in the ground water;

(ii) A proposed ground-water monitoring system;

(iii) Background values for each proposed monitoring parameter or constituent, or procedures to calculate such values; and

(iv) A description of proposed sampling, analysis and statistical comparison procedures to be utilized in evaluating ground-water monitoring data.

7. If the presence of hazardous constituents has been detected in the ground water at the point of compliance at the time of the permit application, the owner or operator must submit sufficient information, supporting data, and analyses to establish a compliance monitoring program which meets the requirements of Rule 1200-01-11-.06(6)(j). Except as provided in Rule 1200-01-11-.06(6)(i)8(v), the owner or operator must also submit an engineering feasibility plan for a corrective action program necessary to meet the requirements of Rule 1200-01-11-.06(6)(k), unless the owner or operator obtains written authorization in advance from the Commissioner to submit a proposed permit schedule for submittal of such a plan. To demonstrate compliance with Rule 1200-01-11-.06(6)(j), the owner or operator must address the following items:

(i) A description of the wastes previously handled at the facility;

(ii) A characterization of the contaminated ground water, including concentrations of hazardous constituents;

(iii) A list of hazardous constituents for which compliance monitoring will be undertaken in accordance with Rules 1200-01-11-.06(6)(h) and (j);

(iv) Proposed concentration limits for each hazardous constituent, based on the criteria set forth in Rule 1200-01-11-.06(6)(e)1, including a justification for establishing any alternate concentration limits;

(v) Detailed plans and an engineering report describing the proposed ground-water monitoring system, in accordance with the requirements of Rule 1200-01-11-.06(6)(h); and

(vi) A description of proposed sampling, analysis and statistical comparison procedures to be utilized in evaluating ground-water monitoring data.

8. If hazardous constituents have been measured in the ground water which exceed the concentration limits established under Table 1 of Rule 1200-01-11-.06(6)(e), or if ground water monitoring conducted at the time of permit application under Rules 1200-01-11-.06(6)(a) through (e) at the waste boundary indicates the presence of hazardous constituents from the facility in ground water over background concentrations, the owner or operator must submit sufficient information, supporting data, and analyses to establish a corrective action program which meets the requirements of Rule 1200-01-11-.06(6)(k). However, an owner or operator is not required to submit information to establish a corrective action program if he demonstrates to the Commissioner that alternate concentration limits will protect human health and the environment after considering the criteria listed in Rule 1200-01-11-.06(6)(e)2. An owner or operator who is not required to establish a corrective action program for this reason must instead submit sufficient information to establish a compliance monitoring program which meets the requirements of Rule 1200-01-11-.06(6)(j) and part 6 of this subparagraph. To demonstrate compliance with Rule 1200-01-11-.06(6)(k), the owner or operator must address, at a minimum, the following items:

(i) A characterization of the contaminated ground water, including concentrations of hazardous constituents;

(ii) The concentration limit for each hazardous constituent found in the ground water as set forth in Rule 1200-01-11-.06(6)(e);

(iii) Detailed plans and an engineering report describing the corrective action to be taken;

(iv) A description of how the ground-water monitoring program will demonstrate the adequacy of the corrective action; and

(v) The permit may contain a schedule for submittal of the information required in subparts 8(iii) and (iv of this subparagraph provided the owner or operator obtains written authorization from the Commissioner prior to submittal of the complete permit application.

(d) Treatment Facilities

The following information is required for treatment facilities:

1. A description of the treatment technologies and sequences utilized by types of hazardous wastes handled, to include flow diagrams and mass balances where appropriate; and

2. A description of procedures, structures, or equipment used at the facility to monitor treatment processes.

(e) Information Requirements for Solid Waste Management Units [40 CFR 270.14(d)]

1. The following information is required for each solid waste management unit at a facility seeking a permit:

(i) The location of the unit on the topographic map required under subpart (a)1(xix) of this paragraph;
(ii) Designation of type of unit;

(iii) General dimensions and structural description (supply any available drawings);

(iv) When the unit was operated; and

(v) Specification of all wastes that have been managed at the unit, to the extent available.

2. The owner or operator of any facility containing one or more solid waste management units must submit all available information pertaining to any release of hazardous wastes or hazardous constituents from such unit or units.

3. The owner/operator must conduct and provide the results of sampling and analysis of groundwater, landsurface, and subsurface strata, surface water, or air, which may include the installation of wells, where the Commissioner ascertains it is necessary to complete a Facility Assessment that will determine if a more complete investigation is necessary.

(6) Permit Denial [40 CFR 270.29]

The Commissioner may, pursuant to the procedures in paragraph (7) of this Rule, deny the permit application either in its entirety or as to the active life of a hazardous waste management facility or unit only.

(7) Processing the Permit [40 CFR 124]

(a) Preliminary Notices

Within 30 days after the date of receipt of a complete application as specified below, the Commissioner shall require the applicant/permittee to issue a preliminary public notice under subparagraph (e) of this paragraph for:

1. Each complete Part A permit application received from new facilities; and

2. Each Part B application received from facilities.

(b) Review of the Permit Application

1. The Commissioner shall review every permit application for completeness. Upon completing the review, the Commissioner shall notify the applicant in writing whether the application is complete. For new facilities, the Commissioner shall complete his review and issue this notice within 45 days after receipt of the Part B permit application. If the application is incomplete, the Commissioner shall list the information necessary to make the application complete. When the application is for an existing facility, the Commissioner shall specify in the notice of deficiency a date for submitting the necessary information. The Commissioner shall notify the applicant that the application is complete upon receiving this information. After the application is completed, the Commissioner may request additional information from an applicant but only when necessary to clarify,

modify, or supplement previously submitted material. Requests for such additional information will not render an application incomplete.

2. If an applicant fails or refuses to correct deficiencies in the application, the permit may be denied and appropriate enforcement actions may be taken under the Act.

3. When the Commissioner decides that a site visit is necessary for any reason in conjunction with the processing of an application, he shall notify the applicant and a date shall be scheduled.

(c) Draft Permits

1. Once an application is complete, the Commissioner shall tentatively decide whether the permit should be issued or denied.

2. If the Commissioner tentatively decides the permit should be denied, he or she shall prepare a notice of intent to deny. A notice of intent to deny the permit is a type of draft permit which follows the same procedures as any draft permit prepared under this subparagraph (see part 6 of this subparagraph). If the Commissioner finally decides (under subparagraph (h) of this paragraph) that the tentative decision to deny the permit was incorrect, the Commissioner shall withdraw the notice of intent to deny and proceed to prepare a draft permit as set forth in part 4 of this subparagraph.

3. If the Commissioner tentatively decides the permit should be issued, he shall prepare a draft permit as set forth in part 4 of this subparagraph.

4. A draft permit shall contain (either expressly or by reference) all applicable terms and conditions from subparagraphs (8)(a)-(f) of this Rule.

5. (i) For new facilities, except as provided in subpart (ii) of this part, the Commissioner shall issue the notice of intent to deny or the draft permit within 45 days after notifying the applicant that his application was complete (see part (b)1 of this paragraph).

   (ii) If the Commissioner finds it necessary to request additional information from an applicant after the application is deemed complete (see part (b)1 of this paragraph), the 45-day time limit shall be automatically extended a period of time equal to the time it takes for the applicant to submit the requested information (such time to be calculated from the postmarked date of the Commissioner's written request to the date the Department receives the information).

6. All draft permits shall be subject to the procedures of subparagraphs (d), (e), (f), (g), (h), (i), and (j) of this paragraph, unless otherwise specified in those subparagraphs. The Commissioner shall give notice of opportunity for a public hearing (subparagraph (g) of this paragraph), issue a final decision (subparagraph (i) of this paragraph) and respond to comments (subparagraph (j) of this paragraph).

(d) Fact Sheets

1. A fact sheet shall be prepared for every draft permit (or notice of intent to deny the permit) for:

(i) Disposal facilities or sites (including landfills, injection wells, surface impoundments, and land treatment facilities);

(ii) Incinerators;

(iii) Storage facilities and treatment facilities which handle or are proposed to handle (other than possibly in emergencies) hazardous wastes which are generated off-site by persons other than the owner or operator; and

(iv) Other facilities which the Commissioner finds are the subject of widespread public interest or raise major issues.

2. The fact sheet shall briefly set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit; to include, when applicable:

(i) A brief description of the type of facility or activity which is the subject of the draft permit;

(ii) The type and quantity of wastes which are proposed to be or are being treated, stored, or disposed of;

(iii) A brief summary of the basis for the draft permit conditions including references to applicable statutory or regulatory provisions and appropriate supporting references to the permit application;

(iv) Reasons why any requested waivers or alternatives to required standards do or do not appear justified;

(v) A description of the procedures for reaching a final decision on the draft permit, including:

(I) The beginning and ending dates of the comment period under subparagraph (e) of this paragraph and the address where comments will be received;

(II) Procedures for requesting a public hearing; and

(III) Any other procedures by which the public may participate in the final decision; and

(vi) Name and telephone number of a person to contact for additional information.

3. The Commissioner shall send this fact sheet to the applicant and on request, to any other person.

(e) Public Notices and Public Comments

1. Scope

(i) A person shall give all public notices, as prepared and required by these Rules, including, but not limited to, the following:

(I) I. A Part A permit application as described in subparagraph (a) of this paragraph has been received;

II. A Part B permit application as described in subpart 4(iv) of this subparagraph has been received;

(II) A draft permit prepared under parts (c)2 or (c)3 of this paragraph;

(III) A public hearing scheduled under subparagraph (g) of this paragraph;

(IV) A draft permit, a permit, or a permit modification pursuant to Rule 1200-01-11-.07; or

(V) Interim status closures pursuant to Rule 1200-01-11-.05(7)(c)4(iv).

(ii) A person shall provide proof of the completion of all notices required to be given by the Commissioner within 10 days following conclusion of the public notice procedures.

(iii) No public notice is required when a request for permit modification, revocation and reissuance, or termination is denied under paragraph (9) of this Rule. Written notice of that denial shall be given to the permittee.

(iv) Public notices may describe more than one permit or permit action.

(v) The Commissioner may prepare and public notice an intent to deny a permit prepared under part (c)2 of this paragraph.

2. Timing

(i) Public notice of the preparation of a notice of intent to deny a permit or of a draft permit, as required under part 1 of this subparagraph, shall allow at least 45 days for public comment.

(ii) Public notice of a public hearing shall be given at least 30 days before the hearing. (Public notice of the hearing may be given at the same time as public notice of the draft permit and the two notices may be combined.)

3. Methods

Public notice of activities described in subpart 1(i) of this subparagraph shall be given by the following methods:

(i) By mailing a copy of a notice to the following persons (any person otherwise entitled to receive notice under this paragraph may waive his or her rights to receive notice for any classes and categories of permits):

(I) The applicant;

(II) Any other agency which the Commissioner knows has issued or is required to issue an environmental permit for the same facility or activity;

(III) Any unit of local government having jurisdiction over the area where the facility is or is proposed to be located;

(IV) Each State agency having any authority under State law with respect to the construction or operation of such facility; and

(V) Persons on a mailing list developed by:

I. Including those who request in writing to be on the list;

II. Soliciting persons for "area lists" from participants in past permit proceedings in that area; and

III. Notifying the public of the opportunity to be put on the mailing list through periodic publication in the public press and in other publications deemed appropriate by the Commissioner;

(Note: The Commissioner may update the mailing list from time to time by requesting written indication of continued interest from those listed. The Commissioner may delete from the list the name of any person who fails to respond to such a request.)

(ii) By one or more of the following as approved by the Commissioner:

(I) By publication of a notice in a daily or weekly local newspaper of general circulation;

(II) By broadcast over one or more local radio stations;

(III) By placement of signage at the entrance of the facility; and

(iii) By any other method deemed necessary or appropriate by the Commissioner to give actual notice of the action in question to the persons potentially affected by it, including press releases or any other forum or medium to elicit public participation. Such additional notices shall be the financial responsibility of the Commissioner.

(iv) The Commissioner is financially responsible for radio station announcements in excess of two or newspaper notices in excess of one in each county or city where coverage is deemed necessary by the Commissioner.

4. Contents

(i) General Public Notices

Except for the preliminary public notices described in subparagraph (a) of this paragraph, all public notices issued under this part shall contain the following minimum information:

(I) Name and address of the office processing the permit action for which notice is being given;

(II) Name and address of the permittee or permit applicant and, if different, of the facility or activity regulated by the permit;

(III) A brief description of the business conducted at the facility or activity described in the permit application;

(IV) A brief description of the comment procedures required by subparagraphs (f) and (g) of this paragraph and the time and place of any public hearing that will be held, including a statement of procedures to request a public hearing (unless a hearing has already been scheduled), and other procedures by which the public may participate in the final permit decision;

(V) Name, address, and telephone number of a person from whom interested persons may obtain further information, including copies of draft permits and fact sheets; and

(VI) Any additional information considered necessary or proper.

(ii) Public Notices for Public Hearing

In addition to the general public notice described in subpart (i) of this part, the public notice of a public hearing shall contain the following information:

(I) Reference to the dates of previous public notices relating to the permit action;

(II) Date, time, and place of the public hearing; and

(III) A brief description of the nature and purpose of the public hearing, including the applicable rules and procedures.

(iii) Preliminary Notices

The preliminary public notice described in subparagraph (a) of this paragraph shall contain the following information:

(I) The information from items (I), (II), (III), (V), and (VI) of subpart (i) of this part; and

(II) A brief description of the permitting procedures that will be followed, focusing especially upon the opportunities for public participation in the process.

(iv) Public Notice Requirements at the Application Stage

(I) Applicability

The requirements of this subpart shall apply to all part B applications seeking initial permits for hazardous waste management units over which the Department has permit issuance authority. The requirements of this subpart shall also apply to part B applications seeking renewal of permits for such units under subparagraph (9)(a) of this Rule. The requirements of this subpart do not apply to permit modifications under part (9)(c)5 of this Rule or permit applications submitted for the sole purpose of conducting post-closure activities or post-closure activities and corrective action at a facility.

(II) Notification at Application Submittal

I. The Commissioner shall provide public notice as set forth in item 3(i)(V) of this subparagraph, and notice to appropriate units of State and local government as set forth in items 3(i)(III) and (IV) of this subparagraph, that a part B permit application has been submitted to the Department and is available for review.

II. The notice shall be published within a reasonable period of time after the application is received by the Commissioner. The notice must include:

A. The name and telephone number of the applicant's contact person;

B. The name and telephone number of the permitting agency's contact office, and a mailing address to which information, opinions, and inquiries may be directed throughout the permit review process;

C. An address to which people can write in order to be put on the facility mailing list;

D. The location where copies of the permit application and any supporting documents can be viewed and copied;

E. A brief description of the facility and proposed operations, including the address, and directions from a state highway or interstate, or a map (e.g., a sketched or copied street map if the location is remote or not easily accessible) of the facility location on the front page of the notice; and

F. The date that the application was submitted.

(III) Concurrent with the notice required under item (II) of this subpart, the Commissioner must place the permit application and any supporting documents in a location accessible to the public in the vicinity of the facility or at the permitting agency's office.

(v) Information Repository

(I) Applicability

The requirements of this subpart apply to all applications seeking permits for hazardous waste management units over which the Department has permit issuance authority.

(II) The Commissioner may assess the need, on a case-by-case basis, for an information repository. When assessing the need

for an information repository, the Commissioner shall consider a variety of factors, including: the level of public interest; the type of facility; the presence of an existing repository; and the proximity to the nearest copy of the administrative record. If the Commissioner determines, at any time after submittal of a permit application, that there is a need for a repository, then the Commissioner shall notify the facility that it must establish and maintain an information repository. (See part (8)(a)13 of this Rule for similar provisions relating to the information repository during the life of a permit.)

(III) The information repository shall contain all documents, reports, data, and information deemed necessary by the Commissioner to fulfill the purposes for which the repository is established. The Commissioner shall have the discretion to limit the contents of the repository.

(IV) The information repository shall be located and maintained at a site chosen by the facility. If the Commissioner finds the site unsuitable for the purposes and persons for which it was established, due to problems with the location, hours of availability, access, or other relevant considerations, then the Commissioner shall specify a more appropriate site.

(V) The Commissioner shall specify requirements for informing the public about the information repository. At a minimum, the Commissioner shall require the facility to provide a written notice about the information repository to all individuals on the facility mailing list.

(VI) The facility owner/operator shall be responsible for maintaining and updating the repository with appropriate information throughout a time period specified by the Commissioner. The Commissioner may close the repository at his or her discretion, based on the factors in item (II) of this subpart.

5. Attachments

In addition to the general public notice described in subpart 4(i) of this subparagraph, all persons identified in items 3(i)(I), (II), (III), and (IV) of this subparagraph shall be mailed a copy of the fact sheet (if any) and the draft permit (if any).

(f) Public Comments and Requests for Public Hearings

During the public comment period provided under subpart (e)2(i) of this paragraph, any interested person may submit written comments on the draft permit and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. All comments shall be considered in making the final decision and shall be answered as provided in subparagraph (j) of this paragraph.

(g) Public Hearings

1. (i) The Commissioner shall hold a public hearing whenever he or she finds, on the basis of requests, a significant degree of public interest in a draft permit(s).

   (ii) The Commissioner may also hold a public hearing at his or her discretion, whenever, for instance, such a hearing might clarify one or more issues involved in the permit decision.

   (iii) The Commissioner shall hold a public hearing whenever he or she receives written notice of opposition to a draft permit and a request for a hearing, within 45 days of public notice under subpart (e)2(i) of this paragraph.

   (iv) Whenever possible, the Commissioner shall schedule a hearing under this subparagraph at a location convenient to the nearest population center to the subject facility.

   (v) Public notice of the hearing shall be given as specified in subparagraph (e) of this paragraph.

2. Any person may submit oral or written statements and data concerning the draft permit. Reasonable limits may be set upon the time allowed for oral statements, and the submission of statements in writing may be required. The public comment period under subparagraph (e) of this paragraph shall automatically be extended to the close of any public hearing under this subparagraph. The hearing officer may also extend the comment period by so stating at the hearing.

3. A tape recording or written transcript of the hearing shall be made available to the public.

(h) Reopening of the Public Comment Period

1. If any data, information, or arguments submitted during the public comment period appear to raise substantial new questions concerning a permit action, the Commissioner may (at his or her discretion or as directed by the Board) take one or more of the following actions:

   (i) Prepare a new draft permit, appropriately modified, under subparagraph (c) of this paragraph;

   (ii) Prepare a fact sheet or revised fact sheet under subparagraph (d) of this paragraph and reopen the comment period under subparagraph (e) of this paragraph; or

   (iii) Reopen or extend the comment period under subparagraph (e) of this paragraph to give interested persons an opportunity to comment on the information or arguments submitted.

2. Comments filed during the reopened comment period shall be limited to the substantial new questions that caused its reopening. The public notice under subparagraph (e) of this paragraph shall define the scope of the reopening.

3. Public notice of any of the actions of part 1 of this subparagraph shall be issued under subparagraph (e) of this paragraph.

(i) Final Permit Decision

1. After the close of the public comment period under subparagraph (e) of this paragraph on a draft permit (including a notice of intent to deny a permit), the Commissioner as set forth in T.C.A. §68-212-108(a) shall issue a final permit decision (or a decision to deny a permit for the active life of a hazardous waste management facility or unit under paragraph (6) of this Rule). For new facilities, this final decision shall be issued within 60 days after the close of the comment period. The Commissioner shall notify the applicant and each person who has submitted written comments or requested notice of the final permit decision. For the purposes of this subparagraph, a final permit decision means a final decision to issue, deny, modify, revoke and reissue, or terminate a permit.

2. A final permit decision (or a decision to deny a permit for the active life of a hazardous waste management facility or unit under paragraph (6) of this Rule) shall become effective 30 days after the date of the service of notice of the decision under part 1 of this subparagraph unless a different date is specified in the decision or review is requested on the permit under subparagraph (k) of this paragraph.

(j) Response to Comments

1. At the time that a final permit decision is issued under subparagraph (i) of this paragraph, the Commissioner shall issue a response to comments. This response shall:

(i) Specify which provisions, if any, of the draft permit have been changed in the final permit decision, and the reasons for the change; and

(ii) Briefly describe and respond to all significant comments on the draft permit raised during the public comment period, or during any public hearing.

2. The response to comments shall be made available to the public.

(k) Appeals

If, in his final permit decision under subparagraph (i) of this paragraph, the Commissioner denied the permit or issued it subject to conditions with which the permit applicant disagrees, the applicant may appeal the decision to the Board as set forth in T.C.A. §68-212-113(a)2 and (b). If the Commissioner fails to take any action on a permit application within 45 days after it was submitted to him/her or fails to meet the time limits imposed by parts (b)1, (c)5, and (i)1 of this paragraph, the permit applicant may appeal to the Board as set forth in T.C.A. §68-212-113(a)3 and (b).

(8) Terms of the Permit

(a) Conditions Applicable to all Permits [40 CFR 270.30]

The following conditions apply to all permits, and shall be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to this subparagraph must be included in the permit.

1. Duty to Comply

The permittee must comply with all conditions of this permit, except that the permittee need not comply with the conditions of the permit to the extent and for

the duration such noncompliance is authorized in an emergency permit (see subparagraph (1)(d) of this Rule). Any permit noncompliance, except under the terms of an emergency permit, constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

2. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.

3. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. Duty to Mitigate

In the event of noncompliance with the permit, the permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment.

5. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

6. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any existing permit condition.

7. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

8. Duty to Provide Information

The permittee shall furnish to the Commissioner, within a reasonable time, any relevant information which the Commissioner may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the

Commissioner, upon request, copies of records required to be kept by this permit.

9. Inspection and Entry

The permittee shall allow the Commissioner, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

(i) Enter at reasonable times upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

(ii) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(iii) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit;

(iv) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Act, any substances or parameters at any location; and

(v) Make photographs for the purpose of documenting items of compliance or noncompliance at waste management units, or where appropriate to protect legitimate proprietary interests, make such photographs for him or her.

10. Monitoring and Records

(i) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(ii) The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, the certification required by Rule 1200-01-11-.06(5)(d)2(ix), and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report, certification, or application. The permittee shall maintain records from all ground-water monitoring wells and associated ground-water surface elevations, for the active life of the facility, and, for disposal facilities, for the post-closure care period as well. This period may be extended by request of the Commissioner at any time.

(iii) Records of monitoring information shall include:

(I) The date, exact place, and time of sampling or measurements;

(II) The individual(s) who performed the sampling or measurements;

(III) The date(s) analyses were performed;

(IV) The individual(s) who performed the analyses;

(V) The analytical techniques or methods used; and

(VI) The results of such analyses.

11. Signatory Requirement

All applications, reports, or information submitted to the Commissioner shall be signed and certified. (See subparagraph (2)(a) of this Rule.)

12. Reporting Requirements

(i) Planned changes

The permittee shall give notice to the Commissioner as soon as possible of any planned physical alterations or additions to the permitted facility.

(ii) Anticipated noncompliance

The permittee shall give advance notice to the Commissioner as soon as possible of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. For a new facility, the permittee may not commence treatment, storage, or disposal of hazardous waste; and for a facility being modified, the permittee may not treat, store, or dispose of hazardous waste in the modified portion of the facility except as provided in part (9)(c)5 of this Rule, until:

(I) The permittee has submitted to the Commissioner by certified mail or hand delivery a letter signed by the permittee and a registered professional engineer stating that the facility has been constructed or modified in compliance with the permit; and

(II) I. The Commissioner has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of the permit; or

II. Within 15 days of the date of submission of the letter in item (I) of this subpart, the permittee has not received notice from the Commissioner of his or her intent to inspect, prior inspection is waived and the permittee may commence treatment, storage, or disposal of hazardous waste.

(iii) Transfers

This permit is not transferable to any person except after notice to the Commissioner. The Commissioner may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Act. (See subparagraph (9)(b) of this Rule; in some cases, modification or revocation and reissuance is mandatory.)

(iv) Monitoring reports

Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(v) Compliance schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

(vi) Twenty-four hour reporting

(I) The permittee shall report any noncompliance which may endanger health or the environment orally within 24 hours from the time the permittee becomes aware of the circumstances, including:

I. Information concerning release of any hazardous waste that may cause an endangerment to public drinking water supplies.

II. Any information of a release or discharge of hazardous waste, or of a fire or explosion from the hazardous waste management facility, which could threaten the environment or human health outside the facility.

(II) The description of the occurrence and the cause shall 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;

IV. Name and quantity of material(s) involved;

V. The extent of injuries, if any;

VI. An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and

VII. Estimated quantity and disposition of recovered material that resulted from the incident.

(III) A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The Commissioner may waive the five day written notice requirement in favor of a written report within fifteen days.

(vii) Manifest discrepancy report

If a significant discrepancy in a manifest is discovered, the permittee must attempt to reconcile the discrepancy. If not resolved within fifteen days, the permittee must submit a letter report, including a copy of the manifest, to the Commissioner. (See Rule 1200-01-11-.06(5)(c).)

(viii) Unmanifested waste report

Such report must be submitted to the Commissioner within 15 days of receipt of unmanifested waste. (See Rule 1200-01-11-.06(5)(g).)

(ix) Annual report

An annual report must be submitted covering facility activities during the previous calendar year. (See Rule 1200-01-11-.06(5)(b).)

(x) Other noncompliance

The permittee shall report all instances of noncompliance not reported under subparts (iv), (v), and (vi) of this part, at the time monitoring reports are submitted. The reports shall contain the information listed in subpart (vi) of this part.

(xi) Other information

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Commissioner, it shall promptly submit such facts or information.

13. Information Repository

The Commissioner may require the permittee to establish and maintain an information repository at any time, based on the factors set forth in item (7)(e)4(v)(III) of this Rule. The information repository will be governed by the provisions in items (7)(e)4(v)(III)-(VI) of this Rule.

(b) Establishing permit conditions [40 CFR 270.32]

1. In addition to conditions required in all permits (subparagraph (a) of this paragraph), the Commissioner shall establish conditions, as required on a case-by-case basis, in permits under subparagraphs (c) (duration of permits), (d) (schedules of compliance), and (e) (monitoring).

2. (i) Each permit shall include permit conditions necessary to achieve compliance with the Act and regulations, including each of the applicable requirements specified in Rules 1200-01-11-.06, .07, .09 and .10. In satisfying this provision, the Commissioner may incorporate applicable requirements of Rules 1200-01-11-.06, .07, .09 and .10 directly into the permit or establish other permit conditions that are based on these Rules.

(ii) Each permit shall include such terms and conditions as the Commissioner determines necessary to protect human health and the environment.

(iii) If, as the result of an assessment(s) or other information, the Commissioner determines that conditions are necessary in addition to those required under 40 CFR 63 Subpart EEE, Rule 1200-01-11-.06 or Rule 1200-01-11-.09 to ensure protection of human health and the environment, he shall include those terms and conditions in a RCRA permit for a hazardous waste combustion unit.

3. An applicable requirement is a State statutory or regulatory requirement which takes effect prior to final administrative disposition of a permit. Subparagraph (7)(h) of this Rule (reopening of the public comment period) provides a means for reopening permit proceedings at the discretion of the Commissioner when applicable new requirements become effective during the permitting process and are of sufficient magnitude to make additional proceedings desirable. An applicable requirement is also any requirement which takes effect prior to the modification or revocation and reissuance of a permit, to the extent allowed in paragraph (9) of this Rule.

4. New or reissued permits, and to the extent allowed under paragraph (9) of this Rule, modified or revoked and reissued permits, shall incorporate each of the applicable requirements referenced in this subparagraph and in subparagraph (8)(e) of this Rule.

5. Incorporation

All permit conditions shall be incorporated either expressly or by reference. If incorporated by reference, a specific citation to the applicable regulations or requirements must be given in the permit.

(c) Duration of Permits [40 CFR 270.50]

1. Permits shall be effective for a fixed term not to exceed ten (10) years or the expected operating life of new facilities or the expected remaining life of existing facilities, whichever is less.

2. The Commissioner may issue any permit for a duration that is less than the full allowable term under part 1 of this subparagraph.

3. Except as provided in subparagraph (9)(a) of this Rule, the term of a permit shall not be extended by modification beyond the maximum duration specified in part 1 of this subparagraph.

4. Each permit for a land disposal facility shall be reviewed by the Commissioner five years after the date of permit issuance or reissuance and shall be modified as necessary, as provided in item (9)(c)3(xiii) of this Rule.

(d) Schedules of Compliance [40 CFR 270.33]

1. The permit may, when appropriate, specify a schedule of compliance leading to compliance with the Act and regulations.

(i) Time for compliance

Any schedules of compliance under this section shall require compliance as soon as possible.

(ii) Interim dates

Except as provided in item 2(i)(II) of this subparagraph, if a permit establishes a schedule of compliance which exceeds 1 year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement.

(I) The time between interim dates shall not exceed 1 year.

(II) If the time necessary for completion of any interim requirement is more than 1 year and is not readily divisible into stages for completion, the permit shall specify interim dates for the submission of reports of progress toward completion of the interim requirements and indicate a projected completion date.

(iii) Reporting

The permit shall be written to require that no later than 14 days following each interim date and the final date of compliance, the permittee shall notify the Commissioner in writing, of its compliance or noncompliance with the interim or final requirements.

2. Alternative schedules of compliance

A permit applicant or permittee may cease conducting regulated activities (by receiving a terminal volume of hazardous waste and, for treatment and storage HWM facilities, closing pursuant to applicable requirements; and, for disposal HWM facilities, closing and conducting post-closure care pursuant to applicable requirements) rather than continue to operate and meet permit requirements as follows:

(i) If the permittee decides to cease conducting regulated activities at a given time within the term of a permit which has already been issued:

(I) The permit may be modified to contain a new or additional schedule leading to timely cessation of activities; or

(II) The permittee shall cease conducting permitted activities before noncompliance with any interim or final compliance schedule requirement already specified in the permit.

(ii) If the decision to cease conducting regulated activities is made before issuance of a permit whose term will include the termination date, the permit shall contain a schedule leading to termination which will ensure timely compliance with applicable requirements.

(iii) If the permittee is undecided whether to cease conducting regulated activities, the Commissioner may issue or modify a permit to contain two schedules as follows:

(I) Both schedules shall contain an identical interim deadline requiring a final decision on whether to cease conducting regulated activities no later than a date which ensures sufficient time to comply with applicable requirements in a timely manner if the decision is to continue conducting regulated activities;

(II) One schedule shall lead to timely compliance with applicable requirements;

(III) The second schedule shall lead to cessation of regulated activities by a date which will ensure timely compliance with applicable requirements;

(IV) Each permit containing two schedules shall include a requirement that after the permittee has made a final decision under item 2(iii)(I) of this subparagraph it shall follow the schedule leading to compliance if the decision is to continue conducting regulated activities, and follow the schedule leading to termination if the decision is to cease conducting regulated activities.

(iv) The applicant's or permittee's decision to cease conducting regulated activities shall be evidenced by a firm public commitment satisfactory to the Commissioner, such as resolution of the board of directors of a corporation.

(e) Requirements for Recording and Reporting of Monitoring Results [40 CFR 270.31]

All permits shall specify:

1. Requirements concerning the proper use, maintenance, and installation, when appropriate, of monitoring equipment or methods (including biological monitoring methods when appropriate);

2. Required monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including, when appropriate, continuous monitoring;

3. Applicable reporting requirements based upon the impact of the regulated activity and as specified in Rules 1200-01-11-.06 and .09. Reporting shall be no less frequent than specified in the above regulations.

(f) (Reserved)

(g) Effect of a Permit [40 CFR 270.4]

1. Compliance with a permit during its term constitutes compliance, for purposes of enforcement, with the Act, except for those requirements not included in the permit which:

(i) Become effective by statute;

(ii) Are promulgated under Rule 1200-01-11-.10 restricting the placement of hazardous wastes in or on the land;

(iii) Are promulgated under Rule 1200-01-11-.06 regarding leak detection systems for new and replacement surface impoundment, waste pile, and landfill units, and lateral expansions of surface impoundment, waste pile, and landfill units. The leak detection system requirements include double liners, CQA programs, monitoring, action leakage rates, and response action plans, and will be implemented through the procedures of part (9)(c)5 of this Rule Class 1 permit modifications; or

(iv) Are promulgated under Rules 1200-01-11-.05(27), (28), or (29) limiting air emissions.

2. The issuance of a permit does not convey any property rights of any sort, or any exclusive privilege.

3. The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

(9) Continuation, Transfer, Modification, Revocation and Reissuance, and Termination of Permits

(a) Continuation of Expiring Permits [40 CFR 270.51]

When a permittee has made timely and sufficient application for a new permit, the existing permit does not expire until the application has been finally determined by the Commissioner and, in case the application is denied, or the terms of the new permit limited, until the last day for seeking review of the Commissioner's order or a later date fixed by order of the reviewing court.

(b) Transfer of Permits [40 CFR 270.40]

1. A permit may be transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued (under part 3 of this subparagraph or subparagraph (c) of this paragraph) to identify the new permittee and incorporate such other requirements (e.g., financial requirements) as may be necessary under the Act or this Rule.

2. (i) For the purpose of this Rule Chapter, the "owner or operator" of a treatment, storage or disposal facility has the ultimate responsibility for the operation of the facility, including the final authority to make or control operational decisions and legal responsibility for the business management. A "change of ownership" occurs whenever this ultimate authority to control the activities and the policies of the facility is transferred to another individual, group, or legal entity.

(ii) A "change of ownership" also occurs whenever there is a change in the legal form under which the controlling entity is organized.

(iii) Transactions constituting a change of ownership include, but are not limited to, the following:

(I) Sale or donation of the facility's legal title;

(II) Lease of the entire facility's real and personal property;

(III) A sole proprietor becomes a member of a partnership or corporation, succeeding him as the new operator;

(IV) A partnership dissolves;

(V) One partnership is replaced by another through the removal, addition or substitution of a partner;

(VI) A general partnership becomes a limited partnership, or a limited partnership becomes general;

(VII) Two (2) or more corporations merge and the originally-permitted corporation does not survive;

(VIII) Corporations consolidate;

(IX) A non-profit corporation becomes a general corporation, or a for-profit corporation becomes non-profit;

(X) Transfers between levels of government; and

(XI) Corporate stock transfers or sales, when the controlling interest is transferred.

(iv) Transactions which do not constitute a change of ownership include, but are not limited to, the following:

(I) Changes in the membership of a corporate board of directors or board of trustees;

(II) Two (2) or more corporations merge and the originally-permitted corporation survives;

(III) Changes in the membership of a non-profit corporation; and

(IV) Transfers between departments of the same level of government.

3. Changes in the ownership or operational control of a facility may be made, with prior written approval of the Commissioner, in accordance with the following procedures:

(i) The new owner or operator must submit a revised permit application no later than 90 days prior to the scheduled change by certified mail or other means that establish proof of delivery. A written agreement containing a specific date for transfer of permit responsibility between the current and new permittees must also be submitted to the Commissioner.

(ii) The permittee must send a notice of the modification request including actual dates of the public comment period, to all persons on the facility mailing list maintained by the Commissioner and to the appropriate units of State and local government as specified in items (7)(e)3(i)(II)-(V) of this Rule and must publish this notice in a local newspaper of general circulation. This notice must be mailed and published within 7 calendar days before or after the date of submission of the modification request, and the permittee must provide to the Commissioner evidence of the mailing and publication. The notice must include:

(I) Announcement of a 30-day comment period, in accordance with subpart (iv), and the name and address of a Department contact to whom comments must be sent;

(II) Name and telephone number of the permittee's contact person;

(III) Name and telephone number of a Department contact person;

(IV) Location where copies of the modification request and any supporting documents can be viewed and copied; and

(V) The following statement: "The permittee's compliance history during the life of the permit being modified is available from the Department contact person."

(iii) The permittee must place a copy of the permit modification request and supporting documents in a location accessible to the public in the vicinity of the permitted facility.

(iv) The public shall be provided 30 days to comment on the modification request. The comment period will begin on the date the permittee publishes the notice in the local newspaper. Comments should be submitted to the Department contact identified in the public notice.

(v) When a transfer of ownership or operational control occurs, the old owner or operator shall comply with the requirements of Rule 1200-01-11-.06(8) (Financial Requirements) until the new owner or operator has demonstrated that he or she is complying with the requirements of that Rule. The new owner or operator must demonstrate compliance with Rule 1200-01-11-.06(8) requirements within six months of the date of the change of ownership or operational control of the facility. Upon demonstration to the Commissioner by the new owner or operator of compliance with Rule 1200-01-11-.06(8), the Commissioner shall notify the old owner or operator that he or she no longer needs to comply with Rule 1200-01-11-.06(8) as of the date of demonstration.

(vi) Within the 30 day comment period, any person may request the Commissioner to review, and the Commissioner may for cause reject, any request for change in the ownership or operational control of a facility. The Commissioner must inform the permittee by certified mail that the request has been rejected, explaining the reasons for the rejection. If the request has been rejected, the permittee must comply with the original permit conditions.

(vii) The permittee may elect to follow the procedures in subpart (c)5(ii) of this paragraph for Class 2 modifications instead of the procedures specified in this part. The permittee must inform the Commissioner of this decision in the modification request required in item (c)5(ii)(I) of this paragraph.

(c) Modification or Revocation and Reissuance of Permits [40 CFR 270.41 & 270.42]

1. General [40 CFR 270.41]

Permits may be modified or revoked and reissued only for the reasons shown in parts 3, 4, or 5 of this subparagraph and only according to the procedures set forth in part 2 of this subparagraph. This process may be initiated either by the Commissioner or at the request of the permittee. All such requests from the permittee shall be in writing and shall contain the reasons for the request.

2. Procedures [40 CFR 270.41]

(i) Except as provided in subpart (ii), when the Commissioner receives any information (for example, complaints, inspection findings, monitoring data, required reports, other information submitted by the permittee as required in the permit (see subparagraph (8)(a) of this Rule)), or receives a request for modification or revocation and reissuance under paragraph (9) of this Rule or conducts a review of the permit file, he or she may determine whether one or more of the causes listed in parts 3 and 4 of this subparagraph for modification or revocation and reissuance or both exist. If cause exists, the Commissioner may modify or revoke and reissue the permit accordingly, subject to the limitations of part 6 of this subparagraph, and may request an updated application if necessary. When a permit is modified, only the conditions subject to modification are reopened when a new draft permit is prepared. All other aspects of the existing permit shall remain in effect for the duration of the unmodified permit. If a permit is revoked and reissued, the entire permit is reopened just as if the permit had expired and was being reissued. During any revocation and reissuance proceeding, the permittee shall comply with all conditions of the existing permit until a new final permit is issued. If cause does not exist under this subparagraph, the Commissioner shall not modify or revoke and reissue the permit, except on request of the permittee. If a permit modification is requested by the permittee, the Commissioner shall approve or deny the request according to the procedures of part 5 of this subparagraph. Otherwise, a draft permit must be prepared under subparagraph (7)(c) of this Rule incorporating the proposed changes. This draft permit shall be processed as set forth in paragraph (7) of this Rule. The Commissioner may request additional information and, in the case of a modified permit, may require the submission of an updated permit application. In the case of revoked and reissued permits, the Commissioner shall require the submission of a new application.

(ii) Owners and operators of permitted facilities in existence on the effective date of this rule that have previously filed a permit modification request with the U.S. EPA that fully complied with 40 CFR 270.42, shall be deemed to have satisfied the requirements of part 5 of this subparagraph. The Commissioner shall issue a modified State Permit to those facilities that have received a modified EPA Permit by the effective date of this rule. Further, the processing of permit modification requests submitted to EPA prior to the effective date of this Rule, shall be continued to be processed by the Commissioner as if they had been received and processed initially by the Commissioner.

3. Causes for Modification [40 CFR 270.41(a)]

The following are causes for modification, but not revocation and reissuance, of permits. However, the following may be causes for revocation and reissuance, as well as modification, when the permittee requests or agrees.

(i) There are changes to the permitted facility which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.

(ii) The Commissioner has received information which was not available at the time of permit issuance (other than revised regulations, guidance, or

test methods) and would have justified the application of different permit conditions at the time of issuance.

(iii) The standards or regulations on which the permit was based have been changed by statute, through promulgation of new or amended standards or regulations, or by judicial decision after the permit was issued.

(iv) The Commissioner determines that good cause exists for modification of a compliance schedule, such as an act of God, strike, flood, or materials shortage or other events over which the permittee has little or no control and for which there is no reasonably available remedy.

(v) Modification of a closure plan or post-closure plan is required under Rule 1200-01-11-.06(7)(c)2 or (h)2.

(vi) After the Commissioner receives the notification of expected closure under Rule 1200-01-11-.06(7)(d), when the Commissioner determines that existing permit conditions granting extension of the 90 or 180 day periods under that rule, modification of the 30-year post-closure period under Rule 1200-01-11-.06(7)(h)1, continuation of security requirements under Rule 1200-01-11-.06(7)(h)2, or permission to disturb the integrity of the containment system under Rule 1200-01-11-.06(7)(h)3 are unwarranted.

(vii) When the corrective action program specified in the permit under Rule 1200-01-11-.06(6)(k) has not brought the regulated unit into compliance with the ground-water protection standard within a reasonable period of time.

(viii) To include a detection monitoring program meeting the requirements of Rule 1200-01-11-.06(6)(i), when the owner or operator has been conducting a compliance monitoring program under Rule 1200-01-11-.06(6)(j) or a corrective action program under Rule 1200-01-11-.06(6)(k) and the compliance period ends before the end of the post-closure care period for the unit.

(ix) When a permit requires a compliance monitoring program under Rule 1200-01-11-.06(6)(j), but monitoring data collected prior to permit issuance indicate that the facility is exceeding the ground-water protection standard.

(x) To include conditions applicable to units at a facility that were not previously included in the facility's permit.

(xi) When a land treatment unit is not achieving complete treatment of hazardous constituents under its current permit conditions.

(xii) The permittee has filed a request under Rule 1200-01-11-.06(8)(p)4 for a variance to the level of financial responsibility or the Commissioner demonstrates under Rule 1200-01-11-.06(8)(p)5 that an upward adjustment of the level of financial responsibility is required.

(xiii) Notwithstanding any other provision in this subparagraph, when a permit for a land disposal facility is reviewed by the Commissioner under part (8)(c)4 of this Rule and modification of the permit is necessary to assure

that the facility continues to comply with the currently applicable requirements in this Rule Chapter.

4. Causes for Modification or Revocation and Reissuance [40 CFR 270.41(b)]

The following are causes to modify or, alternatively, revoke and reissue a permit:

(i) Cause exists for termination under subparagraph (d) of this paragraph, and the Commissioner determines that modification or revocation and reissuance is appropriate.

(ii) The Commissioner has received notification (as required in the permit, see subpart (8)(a)12(iii) of this Rule) of a proposed transfer of the permit.

5. Permit Modification at the Request of the Permittee [40 CFR 270.42]

(i) Class 1 Modifications

(I) Except as provided in item II of this subpart, the permittee may put into effect Class 1 modifications listed in Appendix I in paragraph (10) of this Rule under the following conditions:

I. The permittee must notify the Commissioner concerning the modification by certified mail or other means that establish proof of delivery within 7 calendar days after the change is put into effect. This notice must specify the changes being made to permit conditions or supporting documents referenced by the permit and must explain why they are necessary. Along with the notice, the permittee must provide the applicable information required by paragraph (4), paragraph (5) and subparagraphs (1)(e) and (1)(f) of this Rule.

II. The permittee must send a notice of the modification to all persons on the facility mailing list, maintained by the Commissioner in accordance with item (7)(e)3(i)(V) of this Rule, and the appropriate units of State and local government, as specified in items (7)(e)3(i)(II)-(V) of this Rule. This notification must be made within 90 calendar days after the change is put into effect. For the Class I modifications that require prior Commissioner approval, the notification must be made within 90 calendar days after the Commissioner approves the request.

III. Any person may request the Commissioner to review, and the Commissioner may for cause reject, any Class 1 modification. The Commissioner must inform the permittee by certified mail that a Class 1 modification has been rejected, explaining the reasons for the rejection. If a Class 1 modification has been rejected, the permittee must comply with the original permit conditions.

(II) Class 1 permit modifications identified in Appendix I in paragraph (10) of this Rule by a [1]1 may be made only with the prior written approval of the Commissioner.

(III) For a Class 1 permit modification, the permittee may elect to follow the procedures in subpart (ii) of this part for Class 2 modifications instead of the Class 1 procedures. The permittee must inform the Commissioner of this decision in the modification request required in item (ii)(I) of this part.

(ii) Class 2 Modifications

(I) For Class 2 modifications, listed in Appendix I in paragraph (10) of this Rule, the permittee must submit a modification request to the Commissioner that:

I. Describes the exact change to be made to the permit conditions and supporting documents referenced by the permit;

II. Identifies that the modification is a Class 2 modification;

III. Explains why the modification is needed; and

IV. Provides the applicable information required by paragraph (4), paragraph (5) and subparagraphs (1)(e) and (1)(f) of this Rule.

(II) The permittee must send a notice of the modification request including actual dates of the public comment period, to all persons on the facility mailing list maintained by the Commissioner and to the appropriate units of State and local government as specified in items (7)(e)3(i)(II)-(V) of this Rule and must publish this notice in a local newspaper of general circulation. This notice must be mailed and published within 7 days before or after the date of submission of the modification request, and the permittee must provide to the Commissioner evidence of the mailing and publication. The notice must include:

I. Announcement of a 60-day comment period, in accordance with item (V) of this subpart, and the name and address of a Department contact to whom comments must be sent;

II. Announcement of the date, time, and place for a public meeting held in accordance with item (IV) of this subpart;

III. Name and telephone number of the permittee's contact person;

IV. Name and telephone number of a Department contact person;

V. Location where copies of the modification request and any supporting documents can be viewed and copied; and

VI. The following statement: "The permittee's compliance history during the life of the permit being modified is available from the Department contact person."

(III) The permittee must place a copy of the permit modification request and supporting documents in a location accessible to the public in the vicinity of the permitted facility.

(IV) The permittee must hold a public meeting no earlier than 15 days after the publication of the notice required in item (ii)(II) of this subpart and no later than 15 days before the close of the 60-day comment period. The meeting must be held to the extent practicable in the vicinity of the permitted facility.

(V) The public shall be provided 60 days to comment on the modification request. The comment period will begin on the date the permittee publishes the notice in the local newspaper. Comments should be submitted to the Department contact identified in the public notice.

(VI) I. No later than 90 days after receipt of the notification request, the Commissioner must:

A. Approve the modification request, with or without changes, and modify the permit accordingly;

B. Deny the request;

C. Determine that the modification request must follow the procedures in subpart (iii) of this part for Class 3 modifications for the following reasons:

(A) There is significant public concern about the proposed modification; or

(B) The complex nature of the change requires the more extensive procedures of Class 3;

D. Approve the request, with or without changes, as a temporary authorization having a term of up to 180 days; or

E. Notify the permittee that he or she will decide on the request within the next 30 days.

II. If the Commissioner notifies the permittee of a 30-day extension for a decision, the Commissioner must, no later than 120 days after receipt of the modification request:

A. Approve the modification request, with or without changes, and modify the permit accordingly;

B. Deny the request;

C. Determine that the modification request must follow the procedures in subpart (iii) of this part for Class 3 modifications for the following reasons:

(A) There is significant public concern about the proposed modification; or

(B) The complex nature of the change requires the more extensive procedures of Class 3; or

D. Approve the request, with or without changes, as a temporary authorization having a term of up to 180 days.

III. If the Commissioner fails to make one of the decisions specified in subitem (ii)(VI)II of this part by the 120th day after receipt of the modification request, the permittee is automatically authorized to conduct the activities described in the modification request for up to 180 days, without formal Department action. The authorized activities must be conducted as described in the permit modification request and must be in compliance with all appropriate standards of Rule 1200-01-11-.05. If the Commissioner approves, with or without changes, or denies the modification request during the term of the temporary or automatic authorization provided for in subitem (ii)(VI)I, II or III of this part, such action cancels the temporary or automatic authorization.

IV. A. In the case of an automatic authorization under subitem (ii)(VI)III of this part, or a temporary authorization under section (ii)(VI)I D or II D of this part, if the Commissioner has not made a final approval or denial of the modification request by the date 50 days prior to the end of the temporary or automatic authorization, the permittee must within seven days of that time send a notification to persons on the facility mailing list, and make a reasonable effort to notify other persons who submitted written comments on the modification request, that:

(A) The permittee has been authorized temporarily to conduct the activities described in the permit modification request, and

(B) Unless the Commissioner acts to give final approval or denial of the request by the end of the authorization period, the permittee will receive authorization to conduct such activities for the life of the permit.

B. If the owner/operator fails to notify the public by the date specified in section A of this subitem, the effective date of the permanent authorization will be deferred until 50 days after the owner/operator notifies the public.

V. Except as provided in subitem (ii)(VI)VII of this part, if the Commissioner does not finally approve or deny a modification request before the end of the automatic or temporary authorization period or reclassify the modification as a Class 3, the permittee is authorized to conduct the activities described in the permit modification request for the life of the permit unless modified later under subparagraph (c) of this paragraph. The activities authorized under this subitem must be conducted as described in the permit modification request and must be in compliance with all appropriate standards of Rule 1200-01-11-.05.

VI. In making a decision to approve or deny a modification request, including a decision to issue a temporary authorization or to reclassify a modification as a Class 3, the Commissioner must consider all written comments submitted to the Department during the public comment period and must respond in writing to all significant comments in his or her decision.

VII. With the written consent of the permittee, the Commissioner may extend indefinitely or for a specified period the time periods for final approval or denial of a modification request or for reclassifying a modification as a Class 3.

(VII) The Commissioner may deny or change the terms of a Class 2 permit modification request under subitems (ii)(VI)I through III of this part for the following reasons:

I. The modification request is incomplete;

II. The requested modification does not comply with the appropriate requirements of Rule 1200-01-11-.06 or other applicable requirements; or

III. The conditions of the modification fail to protect human health and the environment.

(VIII) The permittee may perform any construction associated with a Class 2 permit modification request beginning 60 days after the submission of the request unless the Commissioner establishes a later date for commencing construction and informs the permittee in writing before day 60.

(IX) Public Notice shall be provided as follows:

I. In the event no adverse public comment is received concerning

the proposed permit modification, the permittee must send a notice of the modification to all persons on the facility mailing list, maintained by the Commissioner, and the appropriate units of State and local government as specified in Rules 1200-01-11-.07(7)(e)3(i)(II)-(V). This notification must be made within 7 days of notification of approval of the modification.

II. In the event there is public comment concerning the proposed modification, the Commissioner shall direct the permittee to publish a notice as specified in Rules 1200-01-11-.07(7)(e)3 and (7)(e)4(i).

(iii) Class 3 Modifications

(I) For Class 3 modifications listed in Appendix I in paragraph (10) of this Rule, the permittee must submit a modification request to the Commissioner that:

I. Describes the exact change to be made to the permit conditions and supporting documents referenced by the permit;

II. Identifies that the modification is a Class 3 modification;

III. Explains why the modification is needed; and

IV. Provides the applicable information required by paragraph (4), paragraph (5) and subparagraphs (1)(e), (1)(f) and (1)(j) of this Rule.

(II) The permittee must send a notice of the modification request, including the actual dates of the public comment period, to all persons on the facility mailing list maintained by the Commissioner and to the appropriate units of State and local government as specified in items (7)(e)3(i)(II)-(V) of this Rule and must publish this notice in a local newspaper of general circulation. This notice must be mailed and published within seven days before or after the date of submission of the modification request, and the permittee must provide to the Commissioner evidence of the mailing and publication. The notice must include:

I. Announcement of a 60-day comment period, and a name and address of a Department contact to whom comments must be sent;

II. Announcement of the date, time, and place for a public meeting on the modification request, in accordance with item (IV) of this subpart;

III. Name and telephone number of the permittee's contact person;

IV. Name and telephone number of a Department contact person;

V. Location where copies of the modification request and any supporting documents can be viewed and copied; and

VI. The following statement: "The permittee's compliance history during the life of the permit being modified is available from the Department contact person."

(III) The permittee must place a copy of the permit modification request and supporting documents in a location accessible to the public in the vicinity of the permitted facility.

(IV) The permittee must hold a public meeting no earlier than 15 days after the publication of the notice required in item (II) of this subpart and no later than 15 days before the close of the 60-day comment period. The meeting must be held to the extent practicable in the vicinity of the permitted facility.

(V) The public shall be provided at least 60 days to comment on the modification request. The comment period will begin on the date the permittee publishes the notice in the local newspaper. Comments should be submitted to the Department contact identified in the notice.

(VI) After the conclusion of the 60-day comment period, the Commissioner must grant or deny the permit modification request according to the permit modification procedures of paragraph (7) of this Rule, with the exception of subparagraph (a). In addition, the Commissioner must consider and respond to all significant written comments received during the 60-day comment period.

(VII) Public Notice shall be provided by the permittee in accordance with Rule 1200-01-11-.07(7)(e) for the draft permit modification and the final permit modification.

(iv) Other Modifications

(I) In the case of modifications not explicitly listed in Appendix I in paragraph (10) of this Rule, the permittee may submit a Class 3 modification request to the Department, or he or she may request a determination by the Commissioner that the modification should be reviewed and approved as a Class 1 or Class 2 modification. If the permittee requests that the modification be classified as a Class 1 or 2 modification, he or she must provide the Department with the necessary information to support the requested classification.

(II) The Commissioner shall make the determination described in item (I) of this subpart as promptly as practicable. In determining the appropriate class for a specific modification, the Commissioner shall consider the similarity of the modification to

other modifications codified in Appendix I in paragraph (10) of this Rule and the following criteria:

I. Class 1 modifications apply to minor changes that keep the permit current with routine changes to the facility or its operation. These changes do not substantially alter the permit conditions or reduce the capacity of the facility to protect human health or the environment. In the case of Class 1 modifications, the Commissioner may require prior approval.

II. Class 2 modifications apply to changes that are necessary to enable a permittee to respond, in a timely manner, to:

A. Common variations in the types and quantities of the wastes managed under the facility permit,

B. Technological advancements, and

C. Changes necessary to comply with new regulations, where these changes can be implemented without substantially changing design specifications or management practices in the permit.

III. Class 3 modifications substantially alter the facility or its operation.

(v) Temporary Authorizations

(I) Upon request of the permittee, the Commissioner may, without prior public notice and comment, grant the permittee a temporary authorization in accordance with this subsection. Temporary authorizations must have a term of not more than 180 days.

(II) I. The permittee may request a temporary authorization for:

A. Any Class 2 modification meeting the criteria in subitem (III)II of this subpart, and

B. Any Class 3 modification that meets the criteria in section (III)II A or B of this subpart; or that meets the criteria in sections (III)II C through E of this subpart and provides improved management or treatment of a hazardous waste already listed in the facility permit.

II. The temporary authorization request must include:

A. A description of the activities to be conducted under the temporary authorization;

B. An explanation of why the temporary authorization is necessary; and

C. Sufficient information to ensure compliance with Rule 1200-01-11-.06 standards.

III. The permittee must send a notice about the temporary authorization request to all persons on the facility mailing list maintained by the Commissioner and to appropriate units of State and local governments as specified in items (7)(e)3(i)(II)-(V) of this Rule. This notification must be made within seven days of submission of the authorization request.

(III) The Commissioner shall approve or deny the temporary authorization as quickly as practical. To issue a temporary authorization, the Commissioner must find:

I. The authorized activities are in compliance with the standards of Rule 1200-01-11-.06.

II. The temporary authorization is necessary to achieve one of the following objectives before action is likely to be taken on a modification request:

A. To facilitate timely implementation of closure or corrective action activities;

B. To allow treatment or storage in tanks or containers, or in containment buildings in accordance with Rule 1200-01-11-.10;

C. To prevent disruption of ongoing waste management activities;

D. To enable the permittee to respond to sudden changes in the types or quantities of the wastes managed under the facility permit; or

E. To facilitate other changes to protect human health and the environment.

(IV) A temporary authorization may be reissued for one additional term of up to 180 days provided that the permittee has requested a Class 2 or 3 permit modification for the activity covered in the temporary authorization, and:

I. The reissued temporary authorization constitutes the Commissioner's decision on a Class 2 permit modification in accordance with section (ii)(VI)I D or II D of this part, or

II. The Commissioner determines that the reissued temporary authorization involving a Class 3 permit modification request is warranted to allow the authorized activities to continue while the modification procedures of subpart (iii) of this part are conducted.

(vi) Public notice and appeals of permit modification decisions

(I) The Commissioner shall notify persons on the facility mailing list and appropriate units of State and local government within 10 days of the Commissioner's decision to grant or deny a Class 2 or 3 permit modification request. The Commissioner shall also notify such persons within 10 days after an automatic authorization for a Class 2 modification goes into effect under subitem (ii)(VI)III or V of this part.

(II) The Commissioner's decision to grant or deny a Class 2 or 3 permit modification request under this section may be appealed under the permit appeal procedures of subparagraph (7)(k) of this Rule.

(III) An automatic authorization that goes into effect under subitem (ii)(VI)III or V of this part may be appealed under the permit appeal procedures of subparagraph (7)(k) of this Rule; however, the permittee may continue to conduct the activities pursuant to the automatic authorization until the appeal has been granted pursuant to subparagraph (7)(k) of this Rule, notwithstanding the provisions of subparagraph (7)(i) of this Rule.

(vii) Newly Regulated Wastes and Units

(I) The permittee is authorized to continue to manage wastes listed or identified as hazardous under Rule 1200-01-11-.02, or to continue to manage hazardous waste in units newly regulated as hazardous waste management units, if:

I. The unit was in existence as a hazardous waste facility with respect to the newly listed or characterized waste or newly regulated waste management unit on the effective date of the final rule listing or identifying the waste, or regulating the unit;

II. The permittee submits a Class 1 modification request on or before the date on which the waste or unit becomes subject to the new requirements;

III. The permittee is in compliance with the applicable standards of Rules 1200-01-11-.05 and .04;

IV. The permittee also submits a complete Class 2 or 3 modification request within 180 days of the effective date of the rule listing or identifying the waste, or subjecting the unit to Rule Chapter 1200-01-11 management standards;

V. In the case of land disposal units, the permittee certifies that each such unit is in compliance with all applicable requirements of Rule 1200-01-11-.05 for groundwater monitoring and financial responsibility on the date 12 months after the effective date of the rule identifying or listing the waste as hazardous, or regulating the unit as a hazardous waste management unit. If the owner or

operator fails to certify compliance with all these requirements, he or she will lose authority to operate under this part.

(II) New wastes or units added to a facility's permit under this subsection do not constitute expansions for the purpose of the 25 percent capacity expansion limit for Class 2 modifications.

(viii) Military Hazardous Waste Munitions Treatment and Disposal

The permittee is authorized to continue to accept waste military munitions notwithstanding any permit conditions barring the permittee from accepting off-site waste, if:

(I) The facility was in existence as a hazardous waste facility, and the facility was already permitted to handle the waste military munitions, on the date when the waste military munitions became subject to hazardous waste regulatory requirements;

(II) On or before the date when the waste military munitions become subject to hazardous waste regulatory requirements, the permittee submits a Class 1 modification request to remove or amend the permit provision restricting the receipt of off-site waste munitions; and

(III) The permittee submits a complete Class 2 modification request within 180 days of the date when the waste military munitions became subject to hazardous waste regulatory requirements.

(ix) Permit Modification List

The Commissioner must maintain a list of all approved permit modifications and must publish a notice once a year in a State-wide newspaper that an updated list is available for review.

(x) Combustion facility changes to meet 40 CFR part 63 MACT standards. The following procedures apply to hazardous waste combustion facility permit modifications requested under Appendix I of paragraph (10) of this Rule.

(I) Facility owners or operators must have complied with the Notification of Intent to Comply (NIC) requirements of 40 CFR 63.1210 that were in effect prior to October 11, 2000, (See 40 CFR Part 63 §§63.1200-63.1499 revised as of July 1, 2000) in order to request a permit modification under this part for the purpose of technology changes needed to meet the standards under 40 CFR 63.1203, 63.1204, and 63.1205.

(II) Facility owners or operators must comply with the Notification of Intent to Comply (NIC) requirements of 40 CFR 63.1210(b) and 63.1212(a) before a permit modification can be requested under this part for the purpose of technology changes needed to meet the 40 CFR 63.1215, 63.1216, 63.1217, 63.1218, 63.1219, 63.1220, and 63.1221 standards promulgated on October 12, 2005.

(III) If the Commissioner does not approve or deny the request within 90 days of receiving it, the request shall be deemed approved. The Commissioner may, at his or her discretion, extend this 90 day deadline one time for up to 30 days by notifying the facility owner or operator.

(xi) Waiver of RCRA permit conditions in support of transition to the 40 CFR 63 MACT standards.

(I) You may request to have specific RCRA operating and emissions limits waived by submitting a Class 1 permit modification request under part (l)10 of Appendix I to Rule 1200-01-11-.07(9)(c)5. You must:

I. Identify the specific RCRA permit operating and emissions limits which you are requesting to waive;

II. Provide an explanation of why the changes are necessary in order to minimize or eliminate conflicts between the RCRA permit and MACT compliance; and

III. Discuss how the revised provisions will be sufficiently protective.

IV. The Commissioner shall approve or deny the request within 30 days of receipt of the request. The Commissioner may, at his or her discretion, extend this 30 day deadline one time for up to 30 days by notifying the facility owner or operator.

(II) To request this modification in conjunction with MACT performance testing where permit limits may only be waived during actual test events and pretesting, as defined under 40 CFR 63.1207(h)(2)(i) and (ii), for an aggregate time not to exceed 720 hours of operation (renewable at the discretion of the Commissioner) you must:

I. Submit your modification request to the Commissioner at the same time you submit your test plans to the Commissioner; and

II. The Commissioner may elect to approve or deny the request continent upon approval of the test plans.

(xii) Performance Track member facilities

The following procedures apply to Performance Track member facilities that request a permit modification under part (o)1 of Appendix I in paragraph (10) of this Rule.

(I) Performance Track member facilities must have complied with the requirements of subpart (2)(f)2(v) of Rule 1200-01-11-.06 in order to request a permit modification under this subparagraph.

(II) The Performance Track member facility should consider the application approved if the Regional Administrator does not: deny the application, in writing; or notify the Performance Track

member facility, in writing, of an extension to the 60-day deadline within 60 days of receiving the request. 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.

6. Facility Siting [40 CFR 270.41(c)]

Suitability of the facility location will not be considered at the time of permit modification or revocation and reissuance unless new information or standards indicate that a threat to human health or the environment exists which was unknown at the time of permit issuance.

(d) Termination of Permits

1. General

Permits may be terminated only for the reasons shown in part 3 of this subparagraph and only according to the procedures set forth in part 2 of this subparagraph. This process may be initiated either by the Commissioner or at the request of the permittee. All such requests from the permittee shall be in writing and shall contain the reasons for the request.

2. Procedures

(i) When the Commissioner receives a request from the permittee or other information (e.g., complaints, inspection findings, monitoring data, reports) indicating that termination of the permit may be in order, he or she may determine whether or not one or more of the causes listed in part 3 of this subparagraph exist.

(ii) If the Commissioner determines cause exists, he or she may proceed to terminate the permit.

(iii) If the Commissioner tentatively decides to terminate a permit, he or she shall issue a notice of intent to terminate. A notice of intent to terminate is a type of draft permit which follows the same procedures as any draft permit prepared and processed under paragraph (7) of this Rule.

(iv) No notice of intent to terminate shall be issued under subpart (iii) of this part until the permittee has been given such notice as is required by T.C.A. § 4-5-320.

3. Causes for Termination [40 CFR 270.43]

The following are causes for terminating a permit during its term or for denying a permit renewal application:

(i) Noncompliance by the permittee with any condition of the permit;

(ii) The permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time;

(iii) A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination; or

(iv) The request of the permittee, providing he has complied with all closure and post-closure requirements in the permit conditions.

(10) APPENDIX [40 CFR 270.42 APPENDIX]

Appendix I to Rule 1200-01-11-.07(9)(c)5 [2]—Classification of Permit Modification
[40 CFR 270.42 Appendix I]

Modifications	Class
(a) General Permit Provisions	
1. Administrative and informational changes	1
2. Correction of typographical errors	1
3. Equipment replacement or upgrading with functionally equivalent components (e.g., pipes, valves, pumps, conveyors, controls)	1
4. Changes in the frequency of or procedures for monitoring, reporting, sampling, or maintenance activities by the permittee:	
(i) To provide for more frequent monitoring, reporting, sampling, or maintenance.	
(ii) Other changes	2
5. Schedule of compliance:	
(i) Changes in interim compliance dates, with prior approval of the Commissioner.	[1]1
(ii) Extension of final compliance date.	3
6. Changes in expiration date of permit to allow earlier permit termination, with prior approval of the Commissioner.	[1]1
7. Changes in ownership or operational control of a facility, unless the procedures of part (9)(b)3 of this Rule are approved by the Commissioner and followed.	2
8. Changes to remove permit conditions that are no longer applicable (i.e., because the standards upon which they are based are no longer applicable to the facility).	[1]1
(b) General Facility Standards	
1. Changes to waste sampling or analysis methods:	
(i) To conform with agency guidance or regulations.	1
(ii) To incorporate changes associated with F039 (multi-source leachate) sampling or analysis methods.	[1]1
(iii) To incorporate changes associated with underlying hazardous constituents in ignitable or corrosive wastes.	[1]1
(iv) Other changes.	2
2. Changes to analytical quality assurance/control plan:	
(i) To conform with agency guidance or regulations.	1
(ii) Other changes.	2
3. Changes in procedures for maintaining the operating record.	1

4.		Changes in frequency or content of inspection schedules.	2
5.		Changes in the training plan:	
	(i)	That affect the type or decrease the amount of training given to employees.	2
	(ii)	Other changes.	1
6.		Contingency plan:	
	(i)	Changes in emergency procedures (i.e., spill or release response procedures).	2
	(ii)	Replacement with functionally equivalent equipment, upgrade, or relocate emergency equipment listed.	1
	(iii)	Removal of equipment from emergency equipment list.	2
	(iv)	Changes in name, address, or phone number of coordinators or other persons or agencies identified in the plan.	1
7.		Construction quality assurance plan:	
	(i)	Changes that the CQA officer certifies in the operating record will provide equivalent or better certainty that the unit components meet the design specifications.	1
	(ii)	Other changes	2

(Note: When a permit modification (such as introduction of a new unit) requires a change in facility plans or other general facility standards, that change shall be reviewed under the same procedures as the permit modification.)

(c) Ground-Water Protection

1.		Changes to wells:	
	(i)	Changes in the number, location, depth, or design of upgradient or downgradient wells of permitted ground-water monitoring system.	2
	(ii)	Replacement of an existing well that has been damaged or rendered inoperable, without change to location, design, or depth of the well.	1
2.		Changes in ground-water sampling or analysis procedures or monitoring schedule, with prior approval of the Commissioner.	[1]1
3.		Changes in statistical procedure for determining whether a statistically significant change in ground-water quality between upgradient and downgradient wells has occurred, with prior approval of the Commissioner.	[1]1
4.		Changes in point of compliance.	2
5.		Changes in indicator parameters, hazardous constituents, or concentration limits (including ACLs):	
	(i)	As specified in the groundwater protection standard.	3
	(ii)	As specified in the detection monitoring program.	2

	6.		Changes to a detection monitoring program as required by Rule 1200-01-11-.06(6)(i)8 unless otherwise specified in this appendix.	2
	7.		Compliance monitoring program:	
		(i)	Addition of compliance monitoring program as required by subpart (6)(i)7(iv) and subparagraph (6)(j) of Rule 1200-01-11-.06.	3
		(ii)	Changes to a compliance monitoring program as required by part (6)(j)10 of rule 1200-01-11-.06, unless otherwise specified in this appendix.	2
	8.		Corrective action program:	
		(i)	Addition of a corrective action program as required by subpart (6)(j)8(ii) and subparagraph (6)(k) of Rule 1200-01-11-.06(6).	3
		(ii)	Changes to a corrective action program as required by Rule 1200-01-11-.06(6)(k)8, unless otherwise specified in this appendix.	2
(d)	Closure			
	1.		Changes to the closure plan:	
		(i)	Changes in estimate of maximum extent of operations or maximum inventory of waste on-site at any time during the active life of the facility, with prior approval of the Commissioner.	[1]1
		(ii)	Changes in the closure schedule for any unit, changes in the final closure schedule for the facility, or extension of the closure period, with prior approval of the Commissioner.	[1]1
		(iii)	Changes in the expected year of final closure, where other permit conditions are not changed, with prior approval of the Commissioner.	[1] 1
		(iv)	Changes in procedures for decontamination of facility equipment or structures, with prior approval of the Commissioner.	[1]1
		(v)	Changes in approved closure plan resulting from unexpected events occurring during partial or final closure, unless otherwise specified in this appendix.	2
		(vi)	Extension of the closure period to allow a landfill, surface impoundment or land treatment unit to receive non-hazardous wastes after final receipt of hazardous wastes under Rules 1200-01-11-.06(7)(d)4 and 5.	2
	2.		Creation of a new landfill unit as part of closure.	3
	3.		Addition of the following new units to be used temporarily for closure activities:	
		(i)	Surface impoundments.	3
		(ii)	Incinerators.	3

			(iii) Waste piles that do not comply with Rule 1200-01-11-.06(12)(a)3.	3
			(iv) Waste piles that comply with Rule 1200-01-11-.06(12)(a)3.	2
			(v) Tanks or containers (other than specified below).	2
			(vi) Tanks used for neutralization, dewatering, phase separation, or component separation, with prior approval of the Commissioner.	[1]1
			(vii) Staging piles	2
(e)	Post-Closure			
	1.		Changes in name, address, or phone number of contact in post-closure plan.	1
	2.		Extension of post-closure care period.	2
	3.		Reduction in the post-closure care period.	3
	4.		Changes to the expected year of final closure, where other permit conditions are not changed.	1
	5.		Changes in post-closure plan necessitated by events occurring during the active life of the facility, including partial and final closure.	2
(f)	Containers			
	1.		Modification or addition of container units:	
		(i)	Resulting in greater than 25% increase in the facility's container storage capacity, except as provided in (f)1(iii) and (f)4(i) below.	3
		(ii)	Resulting in up to 25% increase in the facility's container storage capacity, except as provided in (f)1(iii) and (f)4(i) below.	2
		(iii)	Or treatment processes necessary to treat wastes that are restricted from land disposal to meet some or all of the applicable treatment standards with prior approval of the Commissioner. This modification may also involve addition of new waste codes or narrative descriptions of wastes. It is not applicable to dioxin-containing wastes (F020, 021, 022, 023, 026, 027, and 028).	[1]1
	2.	(i)	Modification of a container unit without increasing the capacity of the unit.	2
		(ii)	Addition of a roof to a container unit without alteration of the containment system.	1
	3.		Storage of different wastes in containers, except as provided in (f)4 below:	
		(i)	That require additional or different management practices from those authorized in the permit.	3

(ii)	That do not require additional or different management practices from those authorized in the permit.	2

(Note: See subpart (9)(c)5(vii) of this Rule for modification procedures to be used for the management of newly listed or identified wastes.)

4. Storage or treatment of different wastes in containers:

(i)	That require addition of units or change in treatment process or management standards, provided that the wastes are restricted from land disposal and are to be treated to meet some or all of the applicable treatment standards. This modification is not applicable to dioxin-containing wastes (F020, 021, 022, 023, 026, 027, and 028).	[1]1
(ii)	That do not require the addition of units or a change in the treatment process or management standards, and provided that the units have previously received wastes of the same type (e.g., incinerator scrubber water). This modification is not applicable to dioxin-containing wastes (F020, 021, 022, 023, 026, 027, and 028).	1

(g) Tanks

1. (i)	Modification or addition of tank units resulting in greater than 25% increase in the facility's tank capacity, except as provided in (g)1(iii), (g)1(iv), and (g)1(v)below.	3
(ii)	Modification or addition of tank units resulting in up to 25% increase in the facility's tank capacity, except as provided in (g)1(iv) and (g)1(v) below.	2
(iii)	Addition of a new tank that will operate for more than 90 days using any of the following physical or chemical treatment technologies: neutralization, dewatering, phase separation, or component separation.	2
(iv)	After prior approval of the Commissioner, addition of a new tank that will operate for up to 90 days using any of the following physical or chemical treatment technologies: neutralization, dewatering, phase separation, or component separation.	[1]1
(v)	Modification or addition of tank units or treatment processes necessary to treat wastes that are restricted from land disposal to meet some or all of the applicable treatment standards with prior approval of the Commissioner. This modification may also involve addition of new waste codes. It is not applicable to dioxin-containing wastes (F020, 021, 022, 023, 026, 027, and 028).	[1]1
2.	Modification of a tank unit or secondary containment system without increasing the capacity of the unit.	2
3.	Replacement of a tank with a tank that meets the same design standards and has a capacity within +/- 10% of the replaced tank provided:	1

-- The capacity difference is no more than 1500 gallons,	
-- The facility's permitted tank capacity is not increased, and	
-- The replacement tank meets the same conditions in the permit.	
4. Modification of a tank management practice.	2
5. Management of different wastes in tanks:	
(i) That require additional or different management practices, tank design, different fire protection specifications, or significantly different tank treatment process from that authorized in the permit, except as provided in (g)5(iii) below.	3
(ii) That do not require additional or different management practices, tank design, different fire protection specifications, or significantly different tank treatment process than authorized in the permit, except as provided in (g)5(iv).	2
(iii) That require addition of units or change in treatment processes or management standards, provided that the wastes are restricted from land disposal and are to be treated to meet some or all of the applicable treatment standards. The modification is not applicable to dioxin-containing wastes (F020, 021, 022, 023, 026, 027, and 028).	[1]1
(iv) That do not require the addition of units or a change in the treatment process or management standards, and provided that the units have previously received wastes of the same type (e.g., incinerator scrubber water). This modification is not applicable to dioxin-containing wastes (F020, 021, 022, 023, 026, 027, and 028).	1

(Note: See subpart (9)(c)5(vii) of this Rule for modification procedures to be used for the management of newly listed or identified wastes.)

(h) Surface Impoundments	
1. Modification or addition of surface impoundment units that result in increasing the facility's surface impoundment storage or treatment capacity.	3
2. Replacement of a surface impoundment unit.	3
3. Modification of a surface impoundment unit without increasing the facility's surface impoundment storage or treatment capacity and without modifying the unit's liner, leak detection system, or leachate collection system.	2
4. Modification of a surface impoundment management practice.	2
5. Treatment, storage, or disposal of different wastes in surface impoundments:	
(i) That require additional or different management practices or different design of the liner or leak detection system than authorized in the permit.	3

(ii)	That do not require additional or different management practices or different design of the liner or leak detection system than authorized in the permit	2
(iii)	That are wastes restricted from land disposal that meet the applicable treatment standards, provided that the unit meets the minimum technological requirements stated in Rule 1200-01-11-.10(1)(e). This modification is not applicable to dioxin-containing wastes (F020, 021, 022, 023, 026, 027, and 028).	1
(iv)	That are residues from wastewater treatment or incineration, provided that disposal occurs in a unit that meets the minimum technological requirements stated in Rule 1200-01-11-.10(1)(e), and provided further that the surface impoundment has previously received wastes of the same type (for example, incinerator scrubber water). This modification is not applicable to dioxin-containing wastes (F020, 021, 022, 023, 026, 027, and 028)	1
6.	Modifications of unconstructed units to comply with Rules 1200-01-11-.06(11)(b)3, (11)(c), (11)(d) and (11)(g)4.	[1]1
7.	Changes in response action plan:	
(i)	Increase in action leakage rate	3
(ii)	Change in a specific response reducing its frequency or effectiveness.	3
(iii)	Other changes	2

(Note: See subpart (9)(c)5(vii) of this Rule for modification procedures to be used for the management of newly listed or identified wastes.)

(i)	Enclosed Waste Piles	
	For all waste piles except those complying with Rule 1200-01-11-.06(12)(a)3, modifications are treated the same as for a landfill. The following modifications are applicable only to waste piles complying with Rule 1200-01-11-.06(12)(a)3.	
1.	Modification or addition of waste pile units:	
(i)	Resulting in greater than 25% increase in the facility's waste pile storage or treatment capacity.	3
(ii)	Resulting in up to 25% increase in the facility's waste pile storage or treatment capacity.	2
2.	Modification of waste pile unit without increasing the capacity of the unit.	2
3.	Replacement of a waste pile unit with another waste pile unit of the same design and capacity and meeting all waste pile conditions in the permit.	1
4.	Modification of a waste pile management practice.	2
5.	Storage or treatment of different wastes in waste piles:	

(i) That require additional or different management practices or different design of the unit.	3
(ii) That do not require additional or different management practices or different design of the unit.	2
6. Conversion of an enclosed waste pile to a containment building unit.	2

(Note: See subpart (9)(c)5(vii) of this Rule for modification procedures to be used for the management of newly listed or identified wastes.)

(j) Landfills and Unenclosed Waste Piles

1. Modification or addition of landfill units that result in increasing the facility's disposal capacity.	3
2. Replacement of a landfill.	3
3. Addition or modification of a liner, leachate collection system, leachate detection system, run-off control, or final cover system.	3
4. Modification of a landfill unit without changing a liner, leachate collection system, leachate detection system, run-off control, or final cover system.	2
5. Modification of a landfill management practice.	2
6. Landfill different wastes:	
(i) That require additional or different management practices, different design of the liner, leachate collection system, or leachate detection system.	3
(ii) That do not require additional or different management practices, different design of the liner, leachate collection system, or leachate detection system.	2
(iii) That are wastes restricted from land disposal that meet the applicable treatment standards, provided that the landfill unit meets the minimum technological requirements stated in Rule 1200-01-11-.10(1)(e). This modification is not applicable to dioxin-containing wastes (F020, 021, 022, 023, 026, 027, and 028).	1
(iv) That are residues from wastewater treatment or incineration, provided that disposal occurs in a landfill unit that meets the minimum technological requirements stated in Rule 1200-01-11-.10(1)(e), and provided further that the landfill has previously received wastes of the same type (for example, incinerator ash). This modification is not applicable to dioxin-containing wastes (F020, 021, 022, 023, 026, 027, and 028).	1
7. Modifications of unconstructed units to comply with Rules 1200-01-11-.06(12)(b)3, (12)(c),(12)(d), (12)(e)3, (14)(b)3, (14)(c), (14)(d)3, and (14)(e).	[1]1
8. Changes in response action plan	
(i) Increase in action leakage rate	3

(ii) Change in a specific response reducing its frequency or effectiveness	3
(iii) Other changes	2

(Note: See subpart (9)(c)5(vii) of this Rule for modification procedures to be used for the management of newly listed or identified wastes.)

(k) Land Treatment

1. Lateral expansion of or other modification of a land treatment unit to increase areal extent.	3
2. Modification of run-on control system.	2
3. Modify run-off control system.	3
4. Other modifications of land treatment unit component specifications or standards required in permit.	2
5. Management of different wastes in land treatment units:	
(i) That require a change in permit operating conditions or unit design specifications.	3
(ii) That do not require a change in permit operating conditions or unit design specifications.	2

(Note: See subpart (9)(c)5(vii) of this Rule for modification procedures to be used for the management of newly listed or identified wastes.)

6. Modification of a land treatment unit management practice to:	
(i) Increase rate or change method of waste application.	3
(ii) Decrease rate of waste application.	1
7. Modification of a land treatment unit management practice to change measures of pH or moisture content, or to enhance microbial or chemical reactions.	2
8. Modification of a land treatment unit management practice to grow food chain crops, to add to or replace existing permitted crops with different food chain crops, or to modify operating plans for distribution of animal feeds resulting from such crops.	3
9. Modification of operating practice due to detection of releases from the land treatment unit pursuant to Rule 1200-01-11-.06(13)(i)7(ii).	3
10. Changes in the unsaturated zone monitoring system, resulting in a change to the location, depth, number of sampling points, or replace unsaturated zone monitoring devices or components of devices with devices or components that have specifications different from permit requirements.	3
11. Changes in the unsaturated zone monitoring system that do not result in a change to the location, depth, number of sampling points, or that replace unsaturated zone monitoring devices or components of devices with devices or components having specifications different from permit requirements.	2
12. Changes in background values for hazardous constituents in soil	2

	and	soil-pore liquid.	
	13.	Changes in sampling, analysis, or statistical procedure.	2
	14.	Changes in land treatment demonstration program prior to or during the demonstration.	2
	15.	Changes in any condition specified in the permit for a land treatment unit to reflect results of the land treatment demonstration, provided performance standards are met, and the Commissioner's prior approval has been received.	[1]1
	16.	Changes to allow a second land treatment demonstration to be conducted when the results of the first demonstration have not shown the conditions under which the wastes can be treated completely, provided the conditions for the second demonstration are substantially the same as the conditions for the first demonstration and have received the prior approval of the Commissioner.	[1]1
	17.	Changes to allow a second land treatment demonstration to be conducted when the results of the first demonstration have not shown the conditions under which the wastes can be treated completely, where the conditions for the second demonstration are not substantially the same as the conditions for the first demonstration.	3
	18.	Changes in vegetative cover requirements for closure.	2
(l)	Incinerators, Boilers, and Industrial Furnaces		
	1.	Changes to increase by more than 25% any of the following limits authorized in the permit: A thermal feed rate limit, a feed stream feed rate limit, a chlorine/chloride feed rate limit, a metal feed rate limit, or an ash feed rate limit. The Commissioner will require a new trial burn to substantiate compliance with the regulatory performance standards unless this demonstration can be made through other means.	3
	2.	Changes to increase by up to 25% any of the following limits authorized in the permit: A thermal feed rate limit, a feedstream feed rate limit, a chlorine/chloride feed rate limit, a metal feed rate limit, or an ash feed rate limit. The Commissioner will require a new trial burn to substantiate compliance with the regulatory performance standards unless this demonstration can be made through other means.	2
	3.	Modification of an incinerator, boiler, or industrial furnace unit by changing the internal size or geometry of the primary or secondary combustion units, by adding a primary or secondary combustion unit, by substantially changing the design of any component used to remove HCl/Cl_2, metals, or particulate from the combustion gases, or by changing other features of the incinerator, boiler, or industrial furnace that could affect its capability to meet the regulatory performance standards. The Commissioner will require a new trial burn to substantiate compliance with the regulatory performance standards unless this demonstration can be made through other means.	3
	4.	Modification of an incinerator, boiler, or industrial furnace unit in a	2

manner that would not likely affect the capability of the unit to meet the regulatory performance standards but which would change the operating conditions or monitoring requirements specified in the permit. The Commissioner may require a new trial burn to demonstrate compliance with the regulatory performance standards.

5. Operating requirements.

(i) Modification of the limits specified in the permit for minimum or maximum combustion gas temperature, minimum combustion gas residence time, oxygen concentration in the secondary combustion chamber, flue gas carbon monoxide and hydrocarbon concentration, maximum temperature at the inlet to the particulate matter emission control system, or operating parameters for the air pollution control system. The Commissioner will require a new trial burn to substantiate compliance with the regulatory performance standards unless this demonstration can be made through other means. 3

(ii) Modification of any stack gas emission limits specified in the permit, or modification of any conditions in the permit concerning emergency shutdown or automatic waste feed cutoff procedures or controls. 3

(iii) Modification of any other operating condition or any inspection or recordkeeping requirement specified in the permit. 2

6. Burning different wastes:

(i) If the waste contains a POHC that is more difficult to burn than authorized by the permit or if burning of the waste requires compliance with different regulatory performance standards than specified in the permit. The Commissioner will require a new trial burn to substantiate compliance with the regulatory performance standards unless this demonstration can be made through other means. 3

(ii) If the waste does not contain a POHC that is more difficult to burn than authorized by the permit and if burning of the waste does not require compliance with different regulatory performance standards than specified in the permit. 2

(Note: See subpart (9)(c)5(vii) of this Rule for modification procedures to be used for the management of newly listed or identified wastes.)

7. Shakedown and trial burn:

(i) Modification of the trial burn plan or any of the permit conditions applicable during the shakedown period for determining operational readiness after construction, the trial burn period, or the period immediately following the trial burn. 2

(ii) Authorization of up to an additional 720 hours of waste burning during the shakedown period for determining [1]1

			operational readiness after construction, with the prior approval of the Commissioner.	
		(iii)	Changes in the operating requirements set in the permit for conducting a trial burn, provided the change is minor and has received the prior approval of the Commissioner.	[1]1
		(iv)	Changes in the ranges of the operating requirements set in the permit to reflect the results of the trial burn, provided the change is minor and has received the prior approval of the Commissioner.	[1]1
	8.		Substitution of an alternative type of nonhazardous waste fuel that is not specified in the permit.	1
	9.		Technology changes needed to meet standards under 40 CFR part 63 (Subpart EEE-National Emission Standards for Hazardous Air Pollutants From Hazardous Waste Combustors), provided the procedures of Rule 1200-01-11-.07(9)(c)5(x) are followed.	[1]1
	10.		Changes to RCRA permit provisions needed to support transition to 40 CFR 63 (Subpart EEE—National Emission Standards for Hazardous Air Pollutants From Hazardous Waste Combustors), provided the procedures of Rule 1200-01-11-.07(9)(c)5(xi) are followed.	
(m)	Containment Buildings			
	1.		Modification or addition of containment building units:	
		(i)	Resulting in greater than 25% increase in the facility's containment building storage or treatment capacity.	3
		(ii)	Resulting in up to 25% increase in the facility's containment building storage or treatment capacity.	2
	2.		Modification of a containment building unit or secondary containment system without increasing the capacity of the unit.	2
	3.		Replacement of a containment building with a containment building that meets the same design standards provided:	
		(i)	The unit capacity is not increased.	1
		(ii)	The replacement containment building meets the same conditions in the permit.	1
	4.		Modification of a containment building management practice.	2
	5.		Storage or treatment of different wastes in containment buildings:	
		(i)	That require additional or different management practices.	3
		(ii)	That do not require additional or different management practices.	2
(n)	Corrective Action			
	1.		Approval of a corrective action management unit pursuant to Rule 1200-01-11-.06(22)(c).	3
	2.		Approval of a temporary unit or time extension for a temporary unit pursuant to Rule 1200-01-11-.06(22)(d).	2

	3.	Approval of a staging pile or staging pile operating term extension pursuant to Rule 1200-01-11-.06(22)(e).	2
(o)	Burden Reduction		
	1.	Approval of reduced inspection frequency for Performance Track member facilities for:	
		(i) Tanks systems pursuant to Rule 1200-01-11-.06(10)(f).	[1]1
		(ii) Containers pursuant to Rule 1200-01-11-.06(9)(e).	[1]1
		(iii) Containment buildings pursuant to Rule 1200-01-11-.06(33)(b)3(iv).	[1]1
		(iv) Areas subject to spills pursuant to Rule 1200-01-11-.06(2)(f)2(iv).	[1]1
	2.	Development of one contingency plan based on Integrated Contingency Plan Guidance pursuant to Rule 1200-01-11-.06(4)(c)2.	[1]1
	3.	Changes to recordkeeping and reporting requirements pursuant to Rules 1200-01-11-.06(4)(g)9, (15)(d)1(ii), (31)(l)2(i), (31)(l)4, (31)(m)1(ii), (10)(g)6, (6)(k)7, and (7)(d)5(v).	1
	4.	Changes to inspection frequency for tank systems pursuant to Rule 1200-01-11-.06(10)(f)2.	[1]1
	5.	Changes to detection and compliance monitoring program pursuant to Rules 1200-01-11-.06(6)(i)4, (i)7(ii) and 7(iii), (j)6 and (j)7.	1

FOOTNOTE: [1]Class 1 Modifications requiring Agency prior approval.

FOOTNOTE: [2]Appendix 1 is not limited to Permit Modification only but includes also modification of all documentation submitted to the Department.

(11) Remedial Action Plans (RAPs) [40 CFR 270 Subpart H]

(Note: Why is this subpart written in a special format? [40 CFR 270.79]

This paragraph is written in a special format to make it easier to understand the regulatory requirements. Like other regulations, this establishes enforceable legal requirements. For this Paragraph, ``I'' and ``you'' refer to the owner/operator.)

(a) General Information

1. What is a RAP? [40 CFR 270.80]

(i) A RAP is a special form of Hazardous Waste permit that you, as an owner or operator, may obtain, instead of a permit issued under paragraphs (1), (2) and (4) through (9) of this Rule, to authorize you to treat, store, or dispose of hazardous remediation waste (as defined in Rule 1200-01-11-.01(2)(a)) at a remediation waste management site. A RAP may only be issued for the area of contamination where the

remediation wastes to be managed under the RAP originated, or areas in close proximity to the contaminated area, except as allowed in limited circumstances under part (f)1 of this paragraph.

(ii) The requirements in paragraphs (1), (2) and (4) through (9) of this Rule do not apply to RAPs unless those requirements for traditional Hazardous Waste permits are specifically required under parts (a)1 through (f)1 of this paragraph. The definitions in Rule 1200-01-11-.01(2)(a) apply to RAPs.

(iii) Notwithstanding any other provision of this Rule, any document that meets the requirements in this part constitutes a Hazardous waste permit under TCA §68-212-108.

(iv) A RAP may be:

(I) A stand-alone document that includes only the information and conditions required by this paragraph; or

(II) Part (or parts) of another document that includes information and/or conditions for other activities at the remediation waste management site, in addition to the information and conditions required by this paragraph.

(v) If you are treating, storing, or disposing of hazardous remediation wastes as part of a cleanup compelled by Federal or State cleanup authorities, your RAP does not affect your obligations under those authorities in any way.

(vi) If you receive a RAP at a facility operating under interim status, the RAP does not terminate your interim status.

2. (RESERVED) [40 CFR 270.81]

3. (RESERVED) [40 CFR 270.82]

4. (RESERVED) [40 CFR 270.83]

5. (RESERVED) [40 CFR 270.84]

6. When do I need a RAP? [40 CFR 270.85]

(i) Whenever you treat, store, or dispose of hazardous remediation wastes in a manner that requires a Hazardous Waste permit under subparagraph (1)(b) of this Rule, you must either obtain:

(I) A Hazardous Waste permit according to paragraphs (1), (2) and (4) through (9) of this Rule; or

(II) A RAP according to this paragraph.

(ii) Treatment units that use combustion of hazardous remediation wastes at a remediation waste management site are not eligible for RAPs under this paragraph.

(iii) You may obtain a RAP for managing hazardous remediation waste at an already permitted facility. You must have these RAPs approved as a modification to your existing permit according to the requirements of subparagraph (9)(c) of this Rule instead of the requirements in this paragraph. When you submit an application for such a modification, however, the information requirements in subitems (9)(c)5(i)(I)I, (9)(c)5(ii)(I)(IV), and (9)(c)5(iii)(I)IV of this Rule do not apply; instead, you must submit the information required under part (b)16 of this paragraph. When your permit is modified the RAP becomes part of the permit. Therefore when your permit (including the RAP portion) is modified, revoked and reissued, terminated or when it expires, it will be modified according to the applicable requirements in subparagraph (9)(b) and (c) of this Rule, revoked and reissued according to the applicable requirements in parts (9)(c)1 through 4, 6 and subparagraph (9)(d) of this Rule, terminated according to the applicable requirements in subparagraph (9)(d) of this Rule, and expire according to the applicable requirements in subparagraphs (8)(c) and (9)(a) of this Rule.

7-10 (RESERVED)

11. Does my RAP grant me any rights or relieve me of any obligations? [40 CFR 270.90]

The provisions of subparagraph (8)(g) of this Rule apply to RAPs. (Note: The provisions of subparagraph (8)(g)1 of this Rule provide you assurance that, as long as you comply with your RAP, the Commissioner will consider you in compliance with Hazardous Waste Regulations, and will not take enforcement actions against you. However, you should be aware of four exceptions to this provision that are listed in subparagraph (8)(g) of this Rule.)

(b) Applying for a RAP

1. How do I apply for a RAP? [40 CFR 270.95]

To apply for a RAP, you must complete an application, sign it, and submit it to the Director according to the requirements in this paragraph.

2.–5. (RESERVED)

6. Who must obtain a RAP? [40 CFR 270.100]

When a facility or remediation waste management site is owned by one person, but the treatment, storage or disposal activities are operated by another person, it is the operator's duty to obtain a RAP, except that the owner must also sign the RAP application.

7.-10. (RESERVED)

11. Who must sign the application and any required reports for a RAP? [40 CFR 270.105]

Both the owner and the operator must sign the RAP application and any required reports according to parts (2)(a)7, 8, and 9 of this Rule. In the application, both the owner and the operator must also make the certification required under subpart (2)(a)10(i) of this Rule. However, the owner may choose the alternative

certification under subpart (2)(a)10(ii) of this Rule if the operator certifies under subpart (2)(a)10(i) of this Rule.

12.-15. (RESERVED)

16. What must I include in my application for a RAP? [40 CFR 270.110]

You must include the following information in your application for a RAP:

(i) The name, address, and Installation Identification Number of the remediation waste management site;

(ii) The name, address, and telephone number of the owner and operator;

(iii) The latitude and longitude of the site;

(iv) The United States Geological Survey (USGS) or county map showing the location of the remediation waste management site;

(v) A scaled drawing of the remediation waste management site showing:

(I) The remediation waste management site boundaries;

(II) Any significant physical structures; and

(III) The boundary of all areas on-site where remediation waste is to be treated, stored or disposed;

(vi) A specification of the hazardous remediation waste to be treated, stored or disposed of at the facility or remediation waste management site. This must include information on:

(I) Constituent concentrations and other properties of the hazardous remediation wastes that may affect how such materials should be treated and/or otherwise managed;

(II) An estimate of the quantity of these wastes; and

(III) A description of the processes you will use to treat, store, or dispose of this waste including technologies, handling systems, design and operating parameters you will use to treat hazardous remediation wastes before disposing of them according to the LDR standards of Rule 1200-01-11-.10, as applicable;

(vii) Enough information to demonstrate that operations that follow the provisions in your RAP application will ensure compliance with applicable requirements of Rules 1200-01-11-.06, .09, and .10;

(viii) Such information as may be necessary to enable the Commissioner to carry out his duties under other State laws as is required for traditional Hazardous Waste permits under subpart (5)(a)1(xx) of this Rule;

(ix) Any other information the Commissioner decides is necessary for demonstrating compliance with this paragraph or for determining any additional RAP conditions that are necessary to protect human health and the environment.

17.-20. (RESERVED)

21. What if I want to keep this information confidential? [40 CFR . 270.115]

Rule 1200-01-11-.01(7) (Proprietary Information) allows you to claim as confidential any or all of the information you submit to the Director under this paragraph. You must assert any such claim at the time that you submit your RAP application or other submissions by stamping the words ``confidential business information'' on each page containing such information. If you do assert a claim at the time you submit the information, the Commissioner will treat the information according to the procedures in Rule 1200-01-11-.01(7) (Proprietary Information). If you do not assert a claim at the time you submit the information, the Commissioner may make the information available to the public without further notice to you. The Commissioner will deny any requests for confidentiality of your name and/or address.

22.-25. (RESERVED)

26. To whom must I submit my RAP application? [40 CFR 270.120]

You must submit your application for a RAP to the Director for approval.

27.-30. (RESERVED)

31. If I submit my RAP application as part of another document, what must I do? [40 CFR 270.125]

If you submit your application for a RAP as a part of another document, you must clearly identify the components of that document that constitute your RAP application.

(c) Getting a RAP Approved

1. What is the process for approving or denying my application for a RAP? [40 CFR 270.130]

(i) If the Commissioner tentatively finds that your RAP application includes all of the information required by part (b)16 of this paragraph and that your proposed remediation waste management activities meet the regulatory standards, the Commissioner will make a tentative decision to approve your RAP application. The Commissioner will then prepare a draft RAP and provide an opportunity for public comment before making a final decision on your RAP application, according to this paragraph.

(ii) If the Commissioner tentatively finds that your RAP application does not include all of the information required by part (b)16 of this paragraph or that your proposed remediation waste management activities do not meet the regulatory standards, the Commissioner may request additional information from you or ask you to correct deficiencies in your application. If you fail or refuse to provide any additional information the Commissioner requests, or to correct any deficiencies in your RAP application, the Commissioner may make a tentative decision to deny your RAP application. After making this tentative decision, the Commissioner will prepare a notice of intent to deny your RAP application (``notice of intent to deny'') and provide an opportunity for public comment before making a final decision on your RAP application,

according to the requirements in this paragraph. The Commissioner may deny the RAP application either in its entirety or in part.

2.-5. (RESERVED)

6. What must the Commissioner include in a draft RAP? [40 CFR 270.135]

If the Commissioner prepares a draft RAP, it must include the:

(i) Information required under subpart (b)16(i) through (vi) of this paragraph;

(ii) The following terms and conditions:

(I) Terms and conditions necessary to ensure that the operating requirements specified in your RAP comply with applicable requirements of Rules 1200-01-11-.06, .09, and .10 (including any recordkeeping and reporting requirements). In satisfying this provision, the Commissioner may incorporate, expressly or by reference, applicable requirements of Rules 1200-01-11-.06, .09, and .10 into the RAP or establish site-specific conditions as required or allowed by Rules 1200-01-11-.06, .09, and .10;

(II) Terms and conditions in subparagraph (8)(a) of this Rule;

(III) Terms and conditions for modifying, revoking and reissuing, and terminating your RAP, as provided in part (d)1 of this paragraph; and

(IV) Any additional terms or conditions that the Commissioner determines are necessary to protect human health and the environment, including any terms and conditions necessary to respond to spills and leaks during use of any units permitted under the RAP; and

(iii) If the draft RAP is part of another document, as described in item (a)1(iv)(II) of this paragraph, the Commissioner must clearly identify the components of that document that constitute the draft RAP.

7.-10. (RESERVED)

11. What else must the Commissioner prepare in addition to the draft RAP or notice of intent to deny? [40 CFR 270.140]

Once the Commissioner has prepared the draft RAP or notice of intent to deny, he must then:

(i) Prepare a statement of basis that briefly describes the derivation of the conditions of the draft RAP and the reasons for them, or the rationale for the notice of intent to deny;

(ii) Compile an administrative record, including:

(I) The RAP application, and any supporting data furnished by the applicant;

(II) The draft RAP or notice of intent to deny;

(III) The statement of basis and all documents cited therein (material readily available at the Department or published material that is generally available need not be physically included with the rest of the record, as long as it is specifically referred to in the statement of basis); and

(IV) Any other documents that support the decision to approve or deny the RAP; and

(iii) Make information contained in the administrative record available for review by the public upon request.

12.-15. (RESERVED)

16. What are the procedures for public comment on the draft RAP or notice of intent to deny? [40 CFR 270.145]

(i) The Commissioner must:

(I) Send notice to you of his intention to approve or deny your RAP application, and send you a copy of the statement of basis;

(II) Require you to publish a notice, as provided for in Rule 1200-01-11-.07(7)(e) and as prepared by him, except for denials, of his tentative decision regarding your RAP application in a local newspaper of general circulation;

(III) Require you to broadcast his tentative decision regarding your RAP application over a local radio station;

(IV) Require you to provide proof of the completion of all notice requirements to him within ten (10) days following conclusion of the public notice procedures; and

(V) Send a notice of his intention to approve or deny your RAP application to each unit of local government having jurisdiction over the area in which your site is located, and to each State agency having any authority under State law with respect to any construction or operations at the site.

(ii) The notice required by subpart (i) of this part must provide an opportunity for the public to submit written comments on the draft RAP or notice of intent to deny within at least 45 days.

(iii) The notice required by subpart (i) of this part must include:

(I) The name and address of the office processing the RAP application;

(II) The name and address of the RAP applicant, and if different, the remediation waste management site or activity the RAP will regulate;

(III) A brief description of the activity the RAP will regulate;

(IV) The name, address and telephone number of a person from whom interested persons may obtain further information,

including copies of the draft RAP or notice of intent to deny, statement of basis, and the RAP application;

(V) A brief description of the comment procedures in this part, and any other procedures by which the public may participate in the RAP decision;

(VI) If a hearing is scheduled, the date, time, location and purpose of the hearing;

(VII) If a hearing is not scheduled, a statement of procedures to request a hearing;

(VIII) The location of the administrative record, and times when it will be open for public inspection; and

(IX) Any additional information the Commissioner considers necessary or proper.

(iv) If, within the comment period, the Commissioner receives written notice of opposition to his intention to approve or deny your RAP application and a request for a hearing, the Commissioner must hold an informal public hearing to discuss issues relating to the approval or denial of your RAP application. The Commissioner may also determine on his own initiative that an informal hearing is appropriate. The hearing must include an opportunity for any person to present written or oral comments. Whenever possible, the Commissioner must schedule this hearing at a location convenient to the nearest population center to the remediation waste management site and give notice according to the requirements in subpart (i) of this part. This notice must, at a minimum, include the information required by subpart (iii) of this part and:

(I) Reference to the date of any previous public notices relating to the RAP application;

(II) The date, time and place of the hearing; and

(III) A brief description of the nature and purpose of the hearing, including the applicable rules and procedures.

17.-20. (RESERVED)

21. How will the Commissioner make a final decision on my RAP application? [40 CFR 270.150]

(i) The Commissioner must consider and respond to any significant comments raised during the public comment period, or during any hearing on the draft RAP or notice of intent to deny, and revise your draft RAP based on those comments, as appropriate.

(ii) If the Commissioner determines that your RAP includes the information and terms and conditions required in part (c)6 of this paragraph, then he will issue a final decision approving your RAP and, in writing, notify you and all commenters on your draft RAP that your RAP application has been approved.

(iii) If the Commissioner determines that your RAP does not include the information required in part (c)6 of this paragraph, then he will issue a final decision denying your RAP and, in writing, notify you and all commenters on your draft RAP that your RAP application has been denied.

(iv) If the Commissioner's final decision is that the tentative decision to deny the RAP application was incorrect, he will withdraw the notice of intent to deny and proceed to prepare a draft RAP, according to the requirements in this paragraph.

(v) When the Commissioner issues his final RAP decision, he must refer to the procedures for appealing the decision under part (c)26 of this paragraph.

(vi) Before issuing the final RAP decision, the Commissioner must compile an administrative record. Material readily available at the issuing Department office or published materials which are generally available and which are included in the Department record need not be physically included with the rest of the record as long as it is specifically referred to in the statement of basis or the response to comments. The Department record for the final RAP must include information in the Department record for the draft RAP (see subpart (c)11(ii) of this paragraph) and:

(I) All comments received during the public comment period;

(II) Tapes or transcripts of any hearings;

(III) Any written materials submitted at these hearings;

(IV) The responses to comments;

(V) Any new material placed in the record since the draft RAP was issued;

(VI) Any other documents supporting the RAP; and

(VII) A copy of the final RAP.

(vii) The Commissioner must make information contained in the Department record available for review by the public upon request.

22-25. (RESERVED)

26. May the decision to approve or deny my RAP application be administratively appealed? [40 CFR 270.155]

(i) Any commenter on the draft RAP or notice of intent to deny, or any participant in any public hearing(s) on the draft RAP, may appeal the Commissioner's decision to approve or deny your RAP application to the Board under subparagraph (7)(k) of this Rule. Any person who did not file comments, or did not participate in any public hearing(s) on the draft RAP, may petition for administrative review only to the extent of the changes from the draft to the final RAP decision. Appeals of RAPs may be made to the same extent as for final permit decisions under

subparagraph (7)(i) of this Rule (or a decision under paragraph (6) of this Rule to deny a permit for the active life of a hazardous waste management facility or unit). Instead of the notice required under subparagraphs (7)(e) and (7)(k) of this Rule, the Commissioner will give public notice of any grant of review of RAPs by the Board through the same means used to provide notice under part (c)16 of this paragraph. The notice will include:

(I) The briefing schedule for the appeal as provided by the Board;

(II) A statement that any interested person may file an amicus brief with the Board; and

(III) The information specified in subpart (c)16(iii) of this paragraph, as appropriate.

(ii) This appeal is a prerequisite to seeking judicial review of these Department actions.

27.-30. (RESERVED)

31. When does my RAP become effective? [40 CFR . 270.160]

Your RAP becomes effective 30 days after the Commissioner notifies you and all commenters that your RAP is approved unless:

(i) The Commissioner specifies a later effective date in his decision;

(ii) You or another person has appealed your RAP under part (c)25 of this paragraph (if your RAP is appealed, and the request for review is granted under part (c)25 of this paragraph, conditions of your RAP are stayed according to subparagraph (7)(c) of this Rule); or

(iii) No commenters requested a change in the draft RAP, in which case the RAP becomes effective immediately when it is issued.

32.-35. (RESERVED

36. When may I begin physical construction of new units permitted under the RAP? [40 CFR 270.165]

You must not begin physical construction of new units permitted under the RAP for treating, storing or disposing of hazardous remediation waste before receiving a finally effective RAP.

37.-40. (RESERVED)

(d) How May my RAP be Modified, Revoked and Reissued, or Terminated?

1. After my RAP is issued, how may it be modified, revoked and reissued, or terminated? [40 CFR 270.170]

In your RAP, the Commissioner must specify, either directly or by reference, procedures for future modifications, revocations and reissuance, or terminations of your RAP. These procedures must provide adequate opportunities for public review and comment on any modification, revocation and reissuance, or

termination that would significantly change your management of your remediation waste, or that otherwise merits public review and comment. If your RAP has been incorporated into a traditional Hazardous Waste permit, as allowed under subpart (a)6(iii) of this paragraph, then the RAP will be modified according to the applicable requirements in subparagraph (9)(b) of this Rule, revoked and reissued according to the applicable requirements in subparagraphs (9)(c) and (d) of this Rule, or terminated according to the applicable requirements of subparagraph (9)(d) of this Rule.

2.-5. (RESERVED)

6. For what reasons may the Commissioner choose to modify my final RAP? [40 CFR 270.175]

(i) The Commissioner may modify your final RAP on his own initiative only if one or more of the following reasons listed in this part exist(s). If one or more of these reasons do not exist, then the Commissioner will not modify your final RAP, except at your request. Reasons for modification are:

(I) You made material and substantial alterations or additions to the activity that justify applying different conditions;

(II) The Commissioner finds new information that was not available at the time of RAP issuance and would have justified applying different RAP conditions at the time of issuance;

(III) The standards or regulations on which the RAP was based have changed because of new or amended statutes, standards or regulations, or by judicial decision after the RAP was issued;

(IV) If your RAP includes any schedules of compliance, the Commissioner may find reasons to modify your compliance schedule, such as an act of God, strike, flood, or materials shortage or other events over which you as the owner/operator have little or no control and for which there is no reasonably available remedy;

(V) You are not in compliance with conditions of your RAP;

(VI) You failed in the application or during the RAP issuance process to disclose fully all relevant facts, or you misrepresented any relevant facts at the time;

(VII) The Commissioner has determined that the activity authorized by your RAP endangers human health or the environment and can only be remedied by modifying; or

(VIII) You have notified the Commissioner (as required in the RAP under subpart (8)(a)12(iii) of this Rule) of a proposed transfer of a RAP.

(ii) Notwithstanding any other provision in this part, when the Commissioner reviews a RAP for a land disposal facility under part (d)26 of this paragraph, he may modify the permit as necessary to assure that the

facility continues to comply with the currently applicable requirements in Rules 1200-01-11-.-01 through .07 and .09.

(iii) The Commissioner will not reevaluate the suitability of the facility location at the time of RAP modification unless new information or standards indicate that a threat to human health or the environment exists that was unknown when the RAP was issued.

7.-10. (RESERVED)

11. For what reasons may the Commissioner choose to revoke and reissue my final RAP? [40 CFR 270.180]

(i) The Commissioner may revoke and reissue your final RAP on his own initiative only if one or more reasons for revocation and reissuance exist(s). If one or more reasons do not exist, then the Commissioner will not modify or revoke and reissue your final RAP, except at your request. Reasons for modification or revocation and reissuance are the same as the reasons listed for RAP modifications in item 6(i)(V) through (VIII) of this subparagraph if the Commissioner determines that revocation and reissuance of your RAP is appropriate.

(ii) The Commissioner will not reevaluate the suitability of the facility location at the time of RAP revocation and reissuance, unless new information or standards indicate that a threat to human health or the environment exists that was unknown when the RAP was issued.

12.-15. (RESERVED)

16. For what reasons may the Commissioner choose to terminate my final RAP, or deny my renewal application? [40 CFR 270.185]

The Commissioner may terminate your final RAP on his own initiative, or deny your renewal application for the same reasons as those listed for RAP modifications in item 6(i)(V) through (VII) of this subparagraph if the Commissioner determines that termination of your RAP or denial of your RAP renewal application is appropriate.

17.-20. (RESERVED)

21. May the decision to approve or deny a modification, revocation and reissuance, or termination of my RAP be administratively appealed? [40 CFR 270.190]

(i) Any commenter on the modification, revocation and reissuance or termination, or any person who participated in any hearing(s) on these actions, may appeal the Commissioner's decision to approve a modification, revocation and reissuance, or termination of your RAP, according to part (c)26 of this paragraph. Any person who did not file comments or did not participate in any public hearing(s) on the modification, revocation and reissuance or termination, may petition for administrative review only of the changes from the draft to the final RAP decision.

(ii) Any commenter on the modification, revocation and reissuance or termination, or any person who participated in any hearing(s) on these actions, may informally appeal the Commissioner's decision to deny a

request for modification, revocation and reissuance, or termination to the Board. Any person who did not file comments, or did not participate in any public hearing(s) on the modification, revocation and reissuance or termination may petition for administrative review only of the changes from the draft to the final RAP decision.

(iii) The process for informal appeals of RAPs is as follows:

(I) The person appealing the decision must send a letter to the Board. The letter must briefly set forth the relevant facts.

(II) The Board has 60 days after receiving the letter to act on it.

(III) If the Board does not take action on the letter within 60 days after receiving it, the appeal shall be considered denied.

(iv) This informal appeal is a prerequisite to seeking judicial review of these Department actions.

22.-25. (RESERVED)

26. When will my RAP expire? [40 CFR 270.195]

RAPs must be issued for a fixed term, not to exceed 10 years, although they may be renewed upon approval by the Commissioner in fixed increments of no more than ten years. In addition, the Commissioner must review any RAP for hazardous waste land disposal five years after the date of issuance or reissuance and you or the Commissioner must follow the requirements for modifying your RAP as necessary to assure that you continue to comply with currently applicable requirements in Hazardous Waste Rules §68-212-107 and §68-212-108.

27.-30. (RESERVED)

31. How may I renew my RAP if it is expiring? [40 CFR 270.200]

If you wish to renew your expiring RAP, you must follow the process for application for and issuance of RAPs in this paragraph.

32.-35. (RESERVED)

36. What happens if I have applied correctly for a RAP renewal but have not received approval by the time my old RAP expires? [40 CFR 270.205]

If you have submitted a timely and complete application for a RAP renewal, but the Commissioner, through no fault of yours, has not issued a new RAP with an effective date on or before the expiration date of your previous RAP, your previous RAP conditions continue in force until the effective date of your new RAP or RAP denial.

37.-40. (RESERVED)

(e) Operating Under Your RAP

1. What records must I maintain concerning my RAP? [40 CFR 270.210]
You are required to keep records of:

(i) All data used to complete RAP applications and any supplemental information that you submit for a period of at least 3 years from the date the application is signed; and

(ii) Any operating and/or other records the Commissioner requires you to maintain as a condition of your RAP.

2.-5. (RESERVED)

6. How are time periods in the requirements in this paragraph and my RAP computed? [40 CFR 270.215]

(i) Any time period scheduled to begin on the occurrence of an act or event must begin on the day after the act or event. (For example, if your RAP specifies that you must close a staging pile within 180 days after the operating term for that staging pile expires, and the operating term expires on June 1, then June 2 counts as day one of your 180 days, and you would have to complete closure by November 28.)

(ii) Any time period scheduled to begin before the occurrence of an act or event must be computed so that the period ends on the day before the act or event. (For example, if you are transferring ownership or operational control of your site, and wish to transfer your RAP, the new owner or operator must submit a revised RAP application no later than 90 days before the scheduled change. Therefore, if you plan to change ownership on January 1, the new owner/operator must submit the revised RAP application no later than October 3, so that the 90th day would be December 31.)

(iii) If the final day of any time period falls on a weekend or legal holiday, the time period must be extended to the next working day. (For example, if you wish to appeal the Commissioner's decision to modify your RAP, then you must petition the Board within 30 days after the Commissioner has issued the final RAP decision. If the 30th day falls on Sunday, then you may submit your appeal by the Monday after. If the 30th day falls on July 4th, then you may submit your appeal by July 5th.)

(iv) Whenever a party or interested person has the right to or is required to act within a prescribed period after the service of notice or other paper upon him by mail, 3 days must be added to the prescribed term. (For example, if you wish to appeal the Commissioner's decision to modify your RAP, then you must petition the Environmental Appeals Board within 30 days after the Commissioner has issued the final RAP decision. However, if the Commissioner notifies you of his decision by mail, then you may have 33 days to petition the Board.)

7.-10. (RESERVED)

11. How may I transfer my RAP to a new owner or operator? [40 CFR 270.220]

(i) If you wish to transfer your RAP to a new owner or operator, you must follow the requirements specified in your RAP for RAP modification to identify the new owner or operator, and incorporate any other necessary requirements. These modifications do not constitute ``significant'' modifications for purposes of part (d)1 of this paragraph. The new

owner/operator must submit a revised RAP application no later than 90 days before the scheduled change along with a written agreement containing a specific date for transfer of RAP responsibility between you and the new permittees.

(ii) When a transfer of ownership or operational control occurs, you as the old owner or operator must comply with the applicable requirements in Rule 1200-01-11-.06(8), (Financial Requirements), until the new owner or operator has demonstrated that he is complying with the requirements in that paragraph. The new owner or operator must demonstrate compliance with Rule 1200-01-11-.06(8) within six months of the date of the change in ownership or operational control of the facility or remediation waste management site. When the new owner/operator demonstrates compliance with Rule 1200-01-11-.06(8) to the Commissioner, the Commissioner will notify you that you no longer need to comply with Rule 1200-01-11-.06(8), as of the date of demonstration.

12.-15. (RESERVED)

16. (Reserved) [40 CFR 270.225]

17.-20. (RESERVED)

(f) Obtaining a RAP for an Off-Site Location

1. May I perform remediation waste management activities under a RAP at a location removed from the area where the remediation wastes originated? [40 CFR 270.230]

(i) You may request a RAP for remediation waste management activities at a location removed from the area where the remediation wastes originated if you believe such a location would be more protective than the contaminated area or areas in close proximity.

(ii) If the Commissioner determines that an alternative location, removed from the area where the remediation waste originated, is more protective than managing remediation waste at the area of contamination or areas in close proximity, then the Commissioner may approve a RAP for this alternative location.

(iii) You must request the RAP, and the Commissioner will approve or deny the RAP, according to the procedures and requirements in this paragraph.

(iv) A RAP for an alternative location must also meet the following requirements, which the Commissioner must include in the RAP for such locations:

(I) The RAP for the alternative location must be issued to the person responsible for the cleanup from which the remediation wastes originated;

(II) The RAP is subject to the expanded public participation requirements in subparagraph (8)(b), (d), and (e) of this Rule;

(III) The RAP is subject to the public notice requirements in part (7)(e)3 of this Rule;

(IV) The site permitted in the RAP may not be located within 61 meters or 200 feet of a fault which has had displacement in the Holocene time (you must demonstrate compliance with this standard through the requirements in subpart (5)(a)1(xi) of this Rule) (See definitions of terms in Rule 1200-01-11-.06(2)(i)1);

Note: Sites located in political jurisdictions other than those listed in Appendix VI of Rule 1200-01-11-.06, are assumed to be in compliance with this requirement.

(v) These alternative locations are remediation waste management sites, and retain the following benefits of remediation waste management sites:

(I) Exclusion from facility-wide corrective action under Rule 1200-01-11-.06(6)(l); and

(II) Application of Rule 1200-01-11-.06(1)(b)9 in lieu of paragraphs (2), (3) and (4) of Rule 1200-01-11-.06.

(12) Integration with Maximum Achievable Control Technology (MACT) Standards [40 CFR 270 Subpart I]

(a) Options for incinerators, cement kilns, lightweight aggregate kilns, solid fuel boilers, liquid fuel boilers and hydrochloric acid production furnaces to minimize emissions from startup, shutdown, and malfunction events [40 CFR 270.235]

1. Facilities with existing permits

(i) Revisions to permit conditions after documenting compliance with MACT

The owner or operator of a RCRA-permitted incinerator, cement kiln, lightweight aggregate kiln, sold fuel boiler, liquid fuel boiler, or hydrochloric acid production furnace may request that the Commissioner address permit conditions that minimize emissions from startup, shutdown, and malfunction events under any of the following options when requesting removal of permit conditions that are no longer applicable according to part (15)(a)2 of Rule 1200-01-11-.06 and part (8)(a)(2) of Rule 1200-01-11-.09:

(I) Retain relevant permit conditions

Under this option, the Commissioner will:

I. Retain permit conditions that address releases during startup, shutdown, and malfunction events, including releases from emergency safety vents, as these events are defined in the facility's startup, shutdown, and malfunction plan required under 40 CFR 63.1206 (c) (2) and

II. Limit applicability of those permit conditions only to when the facility is operating under its startup, shutdown, and malfunction plan.

(II) Revise relevant permit conditions

I. Under this option, the Commissioner will:

A. Identify a subset of relevant existing permit requirements, or develop alternative permit requirements, that ensure emissions of toxic compounds are minimized from startup, shutdown, and malfunction events, including releases from emergency safety vents, based on review of information including the source's startup, shutdown, and malfunction plan, design, and operating history.

B. Retain or add these permit requirements to the permit to apply only when the facility is operating under its startup, shutdown, and malfunction plan.

II. Changes that may significantly increase emissions

A. You must notify the Commissioner in writing of changes to the startup, shutdown, and malfunction plan or changes to the design of the source that may significantly increase emissions of toxic compounds from startup, shutdown, or malfunction events, including releases from emergency safety vents. You must notify the Commissioner of such changes within five days of making such changes. You must identify in the notification recommended revisions to permit conditions necessary as a result of the changes to ensure that emissions of toxic compounds are minimized during these events.

B. The Commissioner may revise permit conditions as a result of these changes to ensure that emissions of toxic compounds are minimized during startup, shutdown, or malfunction events, including releases from emergency safety vents either:

(A) Upon permit renewal; or

(B) If warranted by modifying the permit under part (9) (c) 3 or part (9) (c) 5 of this Rule.

(III) Remove permit conditions

Under this option:

I. The owner or operator must document that the startup, shutdown, and malfunction plan required under 40 CFR

63.1206 (c) (2) has been approved by the Commissioner under 40 CFR 63.1206 (c) (2) (ii) (b) and

II. The Commissioner will remove permit conditions that are no longer applicable according to part (15) (a) 2 of Rule 1200-01-11-.06 and part (8) (a) 2 of Rule 1200-01-11-.09.

(ii) Addressing permit conditions upon permit reissuance

The owner or operator of an incinerator, cement kiln, lightweight aggregate kiln, solid fuel boiler, liquid fuel boiler, or hydrochloric acid production furnace that has conducted a comprehensive performance test and submitted to the Commissioner a Notification of Compliance documenting compliance with the standards of 40 CFR 63 Subpart EEE may request in the application to reissue the permit for the combustion unit that the Commissioner control emissions from startup, shutdown, and malfunction events under any of the following options:

(I) RCRA option A

I. Under this option, the Commissioner will:

A. Include, in the permit, conditions that ensure compliance with parts 1 and 3 of subparagraph (15) (f) of Rule 1200-01-11-.06 or subpart (i) and item (ii) (III) of part (8) (c) 5 of Rule 1200-01-11-.09 to minimize emissions of toxic compounds from startup, shutdown, and malfunction events, including releases from emergency safety vents; and

B. Specify that these permit requirements apply only when the facility is operating under its startup, shutdown, and malfunction plan.; or

(II) RCRA option B

I. Under this option, the Commissioner will:

A. Include, in the permit conditions, that ensure emissions of toxic compounds are minimized from startup, shutdown, and malfunction events, including releases from emergency safety vents, based on review of information including the source's startup, shutdown, and malfunction plan, design and operating history; and

B. Specify that these permit requirements apply only

when the facility is operating under its startup, shutdown, and malfunction plan.

II. Changes that may significantly increase emissions

A. You must notify the Commissioner in writing of

changes to startup, shutdown, and malfunction plan or changes to the design of the source that may significantly increase emissions of toxic compounds from startup, shutdown, or malfunction events, including releases from emergency safety vents. You must notify the Commissioner of such changes within five days of making such changes. You must identify in the notification recommended revisions to permit conditions necessary as a result of the changes to ensure that emissions of toxic compounds are minimized during these events.

B. The Commissioner may revise permit conditions as a result of these changes to ensure that emissions of toxic compounds are minimized during startup, shutdown, or malfunction events, including releases from emergency safety vents either:

(A) Upon permit renewal, or if warranted;

(B) By modifying the permit under part (9) (c) 3 or part (9) (c) 5 of this Rule.

(III) CAA option

Under this option:

I. The owner or operator must document that the startup, shutdown, and malfunction plan required under 40 CFR 63.1206 (c) (2) has been approved by the Commissioner under 40 CFR 63.1206 (c) (2) (ii) (B); and

II. The Commissioner will omit from the permit conditions that are not applicable under part (15) (a) 2 of Rule 1200-01-11-.06 and part (8) (a) 2 of Rule 1200-01-11-.09.

2. Interim status facilities

(i) Interim status operations

In compliance with subparagraph (15) (a) of Rule 1200-01-11-.05 and part (8) (a) 2 of Rule 1200-01-11-.09, the owner or operator of an incinerator, cement kiln, lightweight aggregate kiln, solid fuel boiler, liquid fuel boiler, or hydrochloric acid production furnace that is operating under the interim status standards of Rule 1200-01-11-.05 or 1200-01-11-.09 may control emissions of toxic compounds during startup, shutdown, and malfunction events under either of the following options after conducting a comprehensive performance test and submitting to the Commissioner a Notification of Compliance documenting compliance with the standards of 40 CFR 63 Subpart EEE:

(I) RCRA option

Under this option, the owner or operator continues to comply with the interim status emission standards and operating requirements of Rule 1200-01-11-.05 or Rule 1200-01-11-.09 relevant to control of emission from startup, shutdown, and malfunction events. Those standards and requirements apply only during startup, shutdown, and malfunction events; or

(II) CAA Option

Under this option, the owner or operator is exempt from the interim status standards of Rule 1200-01-11-.05 or Rule 1200-01-11-.09 relevant to control of emissions of toxic compounds during startup, shutdown, and malfunction events upon submission of written notification and documentation to the Director that the startup, shutdown, and malfunction plan required under 40 CFR 63.1206 (c) (2) has been approved by the Commissioner under 40 CFR 63.1206 (c) (2) (ii) (B).

(ii) Operations under a subsequent RCRA permit

When an owner or operator of an incinerator, cement kiln, lightweight aggregate kiln, solid fuel boiler, liquid fuel boiler, or hydrochloric acid production furnance that is operating under the interim status standards of Rule 1200-01-11-.05 or Rule 1200-01-11-.09 submits a RCRA permit application, the owner or operator may request that the Commissioner control emissions from startup, shutdown, and malfunction events under any of the options provided by item 1 (ii) (I), item 1 (ii) (II), or item 1 (ii) (III) of this subparagraph.

3. New units

Hazardous waste incinerator, cement kiln, lightweight aggregate kiln, solid fuel boiler, liquid fuel boiler, or hydrochloric acid production furnace units that become subject to RCRA permit requirements after October 12, 2005 must control emissions of toxic compounds during startup, shutdown, and malfunction events under either of the following options:

(i) Comply with the requirements specified in 40 CFR 63.1206(c)(2); or

(ii) Request to include in the RCRA permit, conditions that ensure emissions of toxic compounds are minimized from startup, shutdown, and malfunction events, including releases from emergency safety vents, based on review of information including the source's startup, shutdown, and malfunction plan and design. The Commissioner will specify that these permit conditions apply only when the facility is operating under its startup, shutdown, and malfunction plan.

Authority: T.C.A. §§4-5-202 and 68-212-101 et seq.

1200-01-11-.08 Fee System For Transporters, Storers, Treaters, Disposers, And Certain Generators Of Hazardous Wastes And For Certain Used Oil Facilities Or Transporters

(1) General

(a) Purpose

The purpose of this Rule is to establish a system and schedule whereby certain fees shall be levied and collected by the Commissioner. Expenditures of such fees collected shall be restricted to operation of the hazardous waste management program established pursuant to the Act. Any unencumbered and any unexpended balance shall be maintained in the Tennessee Environmental Protection Fund (the "Fund").

(b) Applicability

The requirements of this Rule apply as specified to the following persons:

1. All transporters having a hazardous waste transporter permit issued under the Act and all new or existing transporters subject to the transporter permit requirements of Rule 1200-01-11-.04(2);

2. Owners and operators of all hazardous waste storage, treatment, and disposal facilities who are subject to the facility permit requirements of Rule 1200-01-11-.07, except for those subject solely to the permit-by-rule requirements of Rule 1200-01-11-.07(1)(c);

3. All generators of hazardous wastes;

4. Persons requesting that the Solid Waste Disposal Control Board review an action of the Commissioner;

5. All transporters, marketers, processors/re-refiners of used oil, or burners of off-specification used oil;

6. Persons carrying out closure activities, post-closure activities and/or corrective action activities, under permits or other enforceable documents;

7. Persons responsible for spills or accidental discharges (of hazardous waste or other material which, when spilled or discharged, becomes a hazardous waste) requiring investigation and/or remediation of soil, groundwater, or surface water and/or sediment; and

8. All hazardous waste transfer facilities.

(c) Payment of Fees

Any person required to pay a fee under this Rule shall submit the fee by check or money order or other method approved by the Commissioner in the specified amount, made payable to the Treasurer, State of Tennessee for deposit in the Tennessee Environmental Protection Fund.

(d) No permit or other authorization shall be issued or renewed by the Division of Solid Waste Management pursuant to Rule Chapter 1200-01-11 or 1200-1-14 until all fees and/or penalties owed by the applicant to the Division are paid in full, unless a time schedule for payments has been approved and all payments are current or contested fees or penalties are under appeal.

(2) Installation Identification Number Application Fee

Any person who applies to the Department for an Installation Identification Number on the Notification Forms provided by the Department shall submit as part of the request a fee of 100 dollars.

(3) Permit Application Fees

(a) Transporters

Any person who applies for a permit or modification to a permit to transport hazardous wastes in Tennessee must submit as part of said application an application fee of 100 dollars.

(b) Treatment, Storage, and Disposal Facilities (TSDF) including facilities conducting corrective action and post-closure under permits, orders, or other enforceable documents

1. Part A application

Any person who applies for a permit for a hazardous waste storage, treatment, or disposal facility must submit, as part of his Part A application and prior to application review, an application fee for each new or revised application as set forth below:

400 dollars for an existing facility; or

2,000 dollars for a new facility.

2. Part B application

Any person who applies for a permit, or permit renewal, for a hazardous waste storage, treatment, or disposal facility must submit, as part of his Part B application and prior to application review, an application fee for each new or revised application as set forth below:

(i) Part B application for an on-site hazardous waste facility:

10,000 dollars for a storage facility;

10,000 dollars for a treatment facility;

20,000 dollars for a disposal facility; and

20,000 dollars for a landfill site.

(ii) Part B application for a commercial hazardous waste facility:

25,000 dollars for a storage facility;

25,000 dollars for a treatment facility;

40,000 dollars for a disposal facility; and

40,000 dollars for a landfill site.

(iii) Part B application for a post-closure unit pursuant to a permit, order or other enforceable document:

20,000 dollars for a unit not previously permitted under a hazardous waste operating permit; and

10,000 dollars for a unit which previously operated under a hazardous waste operating permit.

(iv) Part B application for corrective action:

10,000 dollars for a facility, as defined under Rule 1200-01-11-.01(2)(a), implementing corrective action under Rule 1200-01-11-.06(6)(1) not already included in subparts (i), (ii) or (iii) of this part.

(c) Special Case: Modification of Existing Facility Permit

Any person who applies for modification or reissuance (following revocation) of his existing facility permit, order, or other enforceable document [refer to Rule 1200-01-11-.07(9)] must submit, as part of his Part B application and prior to modification review, an application fee as set forth below:

1. For owners or operators applying for a Class 1 permit modification, the fee shall be 500 dollars;

2. For owners or operators applying for a Class [1]1 permit modification with changes other than, or in addition to, changes in part 1 above, the fee shall be 3,000 dollars; the Class [1]1 permit modification fee for Maximum Achievable Control Technology (MACT) modifications shall be 6,000 dollars.

3. For owners or operators applying for a change in ownership or operational control of a facility pursuant to Rule 1200-01-11-.07(9)(b)3, the fee shall be 3,000 dollars.

4. For owners or operators applying for a Class 2 permit modification, the fee shall be:

7,000 dollars for modification of a container or tank storage and/or treatment unit, thermal treatment unit, or drip pad, storage and/or treatment unit;

9,000 dollars for modification of a disposal unit, waste pile storage unit, containment building storage and/or treatment unit, surface impoundment storage and/or treatment unit, or other miscellaneous unit; and

10,000 dollars for modification of a post-closure unit.

5. For owners or operators applying for a Class 3 permit modification, the fee shall be:

10,000 dollars for modification of a container or tank storage and/or treatment unit, thermal treatment unit, or drip pad, storage, and/or treatment unit;

12,000 dollars for modification of any permit to include the final remedy for Solid Waste Management Units under corrective action requiring remediation and/or maintenance activities;

12,000 dollars for modification of a disposal unit, waste pile storage unit, containment building storage and/or treatment unit, surface impoundment storage and/or treatment unit, or other miscellaneous unit; and

14,500 dollars for modification of a post-closure unit.

(d) Closure and Post-Closure Plans

Any person required to submit a closure plan or post-closure plan [refer to Rule 1200-01-11-.05(7) and -.06(7)] for a hazardous waste facility must submit, as part of the closure or post-closure plan, and prior to plan review, an application fee, unless the above plan was reviewed as part of a permit application package, as set forth below:

2,000 dollars for a closure plan;

2,000 dollars for a post-closure plan.

(e) Modification of Approved Closure and Post-Closure Plan

Any person who submits a modification to an approved closure plan or post-closure plan must submit, as part of the modification and prior to modification review, a modification fee, unless the above plan was reviewed as part of a permit application package, as set forth below:

250 dollars for Class 1 Modification;

750 dollars for Class [1]1 Modification;

1,000 dollars for Class 2 Modification; and

1,500 dollars for Class 3 Modification.

(f) Emergency Permit

Any person who applies for an emergency permit (refer to Rule 1200-01-11-.07(1)(d)) must submit, as part of the emergency permit application, an application fee of 2,000 dollars.

(g) Research, Demonstration, and Development Permit

Any person who applies for a research, demonstration, and development permit (refer to Rule 1200-01-11-.07(1)(g)) must submit, as part of the research, demonstration, and development permit application, an application fee of 2,000 dollars. An additional fee of 1,000 dollars is assessed for each renewal pursuant to Rule 1200-01-11-.07(1)(g)4.

(h) Temporary Authorization

Any person who applies for a temporary authorization pursuant to Rule 1200-01-11-.07(9)(c)5(v) must submit as part of the temporary authorization request, an application fee of 2000 dollars. An additional fee of 250 dollars is assessed for the renewal pursuant to Rule 1200-01-11-.07(9)(c)5(v)(IV).

(i) Schedule for Timely Action on Permit Applications/Permit Modifications

1. The following documents, when submitted separately, must be reviewed and the applicant notified within the following time frames:

(i)	Hydrogeologic Report (Assessment Plan, Sampling and Analysis Plans, Groundwater Annual Reports, and Groundwater Monitoring Plan)	180 days
(ii)	Closure Plan	180 days
(iii)	Post-Closure Plan	180 days
(iv)	Review of Part A Application for Completeness	45 days
(v)	Initial Review of Part B Application and Class 3 Permit Modifications	180 days
(vi)	Initial Review of Class 1 and [1]1 Modification	60 days

2. Applications, closure plans, post-closure plans, and modifications shall be acted upon (issued or denied) by the Department within the time frames required by Rule 1200-01-11-.07 beginning with the end of the public comment period(s) specified in each public notice.

3. The above timely action periods shall be stayed if:

(i) The applicant requests that review be suspended;

(ii) The department issues a written notice of deficiency and until the applicant adequately addresses said deficiency;

(iii) Priorities set by the Environmental Protection Agency (EPA) require a delay;

(iv) The review process has been halted due to pending judicial and/or administrative actions;

(v) Applicable regulations change;

(vi) The Department requests a delay in the review process to which the applicant agrees; or

(vii) Multiple (5 or more) Class 1 or [1]1 modifications from a single applicant are received.

4. Should the Department not comply with the timely review periods specified in subparagraph (h) of this paragraph, the application fee shall be refunded. The Board shall be provided a quarterly update on the timeliness of permit processing.

(4) Annual Maintenance Fees

(a) Transporters

Each person having a hazardous waste transporter permit issued under the Act must submit to the Commissioner, by December 31 of each year, an annual permit maintenance and renewal fee of 200 dollars.

(b) Treatment, Storage, and Disposal Facilities (TSDF) including facilities conducting corrective action and post-closure

The owner or operator of each hazardous waste treatment, storage, or disposal facility in Tennessee having either a permit issued under the Act or interim status as provided under Rule 1200-01-11-.07(3) must submit to the Commissioner, by March 1 of each year, an annual permit maintenance fee as provided in this subparagraph.

1. General

(i) An annual fee shall be assessed consisting of a base amount plus an additional charge calculated on the facility's total constructed design capacity during the previous calendar year.

(ii) The owner or operator of each treatment, storage, or disposal facility shall be assessed an annual fee each year until all closure, post-closure, and corrective action activities are complete and the facility is closed in accordance with the appropriate standards of Rules 1200-01-11-.05 or 1200-01-11-.06, as applicable.

(iii) For purposes of this subparagraph, a facility that receives hazardous wastes from off-site, other than from contiguous properties, is determined to be an off-site facility for the calendar year in which the off-site hazardous waste is received.

2. Storage Operations

(i) The owner or operator of each facility shall be assessed a base amount plus an additional charge calculated on the total constructed design capacity in gallons (gal.) of the facility's hazardous waste storage operations as set forth below, except as provided for in subpart (iii) of this part:

(I) For facilities which receive only hazardous waste which are generated on-site, a base amount of 4,000 dollars plus an additional:

Constructed Design Capacity	Amount
1 - 5,000 gal.	$1,000
5,001 - 10,000 gal	1,500
10,001 - 50,000 gal.	3,000
50,001 - 100,000 gal.	3,500
100,001 - 500,000 gal.	4,000
500,001 - 1,000,000 gal.	4,500
over 1,000,000 gal.	5,000

(II) For facilities which receive hazardous wastes from off-site generators, a base amount of 8,000 dollars plus an additional:

Constructed Design Capacity	Amount
1 - 5,000 gal.	$ 2,000
5,001 - 10,000 gal.	3,000
10,001 - 50,000 gal.	6,000
50,001 - 100,000 gal.	7,000
100,001 - 500,000 gal.	8,000
500,001 - 1,000,000 gal.	9,000
over 1,000,000 gal.	10,000

(ii) Only the incremental constructed design capacity fee and not the base fee in Item (i)(I) of this part shall apply to facilities with only one on-site storage unit with a capacity less than 10,000 gallons which receives waste only from on-site.

3. Treatment Operations

(i) The owner or operator of each facility shall be assessed a base amount plus an additional charge calculated on the total constructed design capacity in gallons per day (gpd) of the facility's hazardous waste treatment operations as set forth below:

(I) For facilities which receive only hazardous wastes which are generated on-site, a base amount of 6,000 dollars plus an additional:

Constructed Design Capacity	Amount
1 - 5,000 gpd	$2,000
5,001 - 10,000 gpd	2,500
10,001 - 50,000 gpd	3,000
50,001 - 100,000 gpd	3,500
100,001 - 500,000 gpd	4,000
500,001 - 1,000,000 gpd	4,500
over 1,000,000 gpd	5,000

(II) For facilities which receive hazardous waste from off-site generators, a base amount of 10,000 dollars plus an additional:

Constructed Design Capacity	Amount
1 - 5,000 gpd	$ 4,000
5,001 - 10,000 gpd	5,000
10,001 - 50,000 gpd	6,000
50,001 - 100,000 gpd	7,000
100,001 - 500,000 gpd	8,000
500,001 - 1,000,000 gpd	9,000
over 1,000,000 gpd	10,000

(ii) Facilities paying a base amount for Treatment Operations shall not be assessed a separate base amount for Storage Operations located on contiguous property.

(iii) The combined Annual Maintenance Fees for Treatment and Storage for on-site facilities shall not exceed 12,500 dollars per facility, and for off-site facilities this fee shall not exceed 25,000 dollars.

4. Disposal Operations

These fees are applicable only to facilities which require a permit under Rule 1200-01-11-.07 of the Rules governing hazardous waste management for the State of Tennessee. The owner or operator of each facility shall be assessed an annual fee as set forth below:

(i) For non-commercial facilities, a base fee of 6,000 dollars plus an additional:

500 dollars per each acre-foot of remaining design capacity of landfill operations (to include waste piles and surface impoundments used for disposal and subject to closure as landfills);

500 dollars per each acre of remaining design capacity of land application operations; and

1 dollar per gallon per day (gpd) for the permitted injection capacity of injection well operations;

(Note: This fee shall not exceed $15,000 in accordance with T.C.A. §68-203-103(h)(19).)

(ii) For commercial facilities, a base fee of 12,000 dollars plus an additional:

1,000 dollars per each acre-foot of remaining design capacity of landfill operations (to include waste piles and surface impoundments used for disposal and subject to closure as landfills);

1,000 dollars per each acre of remaining design capacity of land application operations; and

1 dollar per gallon per day (gpd) for the permitted injection capacity of injection well operations.

(Note: This fee shall not exceed $50,000 in accordance with T.C.A. §68-203-103(h)(15).)

5. Post-Closure Activity

These fees are applicable to facilities that require a permit, order, or other enforceable document under Rule 1200-01-11-.07 of the Rules governing hazardous waste management for the State of Tennessee. The owner or operator shall be assessed an annual fee set forth below:

(i) For facilities conducting post-closure activities a base fee of 3,000 dollars for each permit, order, or other enforceable document plus an additional:

1,000 dollars for each remediation system conducting active remediation for contaminated media.

6. Corrective Action Activity

These fees are applicable to facilities that require corrective action for Solid Waste Management Units (SWMUs) under Rule 1200-01-11-.07(5)(e) and Rule 1200-01-11-.06(6)(1). The owner or operator shall be assessed an annual fee set forth below:

(i) For facilities conducting corrective action activities under the authority listed above, a base fee of 5,000 dollars plus an additional fee for review of the following types of corrective action at the facility during the past year.

2,000 dollars for Confirmatory Sampling
4,000 dollars for RCRA Facility Investigation
3,000 dollars for Corrective Measures
2,000 dollars for Interim Measures

(Note: This fee does not apply to facilities that are reimbursing the State, pursuant to the Department of Defense/State Memorandum of Agreement, costs incurred by the State for corrective action activities at those facilities.)

(5) Generator Fees

(a) Annual Generator Fees

(Note: Rules 1200-01-11-.02(1)(d)3(ii) and 1200-01-11-.02(1)(e)3 and 4 are applicable in determining generator status for fee purposes.)

1. Except as provided in subparagraph (b) of this paragraph., the Annual Generator Fee for Small Quantity Generators shall consist of a base amount of 1,000 dollars plus an off-site shipping fee determined in accordance with subparagraphs (c) and (d) of this paragraph.

(i) For the purpose of this subparagraph Small Quantity Generator shall mean:

(I) Any generator who generates greater than 100 kilograms, but less than 1000 kilograms of hazardous waste in any calendar month of the previous calendar year; or

(II) Any Conditionally Exempt Small Quantity Generator who accumulates at any time more than 1000 kilograms of non-acute hazardous waste in the previous calendar year.

2. Except as provided in subparagraph (b) of this paragraph, the Annual Generator Fee for Large Quantity Generators shall consist of a base amount of 1,600 dollars plus an off-site shipping fee determined in accordance with subparagraphs (c) and (d) of this paragraph.

(i) For the purpose of this subparagraph Large Quantity Generator shall mean:

(I) Any generator who generates 1000 kilograms or more of hazardous waste in any calendar month of the previous calendar year; or

(II) Any generator who generates 1 kilogram or more of acute hazardous waste, or 100 kilograms or more 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 an acute hazardous waste, in any calendar month of the previous calendar year; or

(b) Exclusions from Base Fee Assessment

1. Hazardous wastes generated from remediation or corrective actions required by the Tennessee Hazardous Waste Management Act of 1977 and 1983; the Resource Conservation and Recovery Act (42 U.S.C. 6901 et seq.); and the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. 9601 et seq.) shall not be subject to the fee calculations in parts (a) 1 or (a) 2 of this paragraph.

2. A Conditionally Exempt Small Quantity Generator does not owe this fee if neither part (a) 1 nor (a) 2 of this paragraph is applicable.

(c) Off-site Shipping Fee

1. Hazardous waste with a thermal heating value greater than 5000 BTU per pound that are subject to energy recovery as defined by handling codes for treatment methods T50 and T80 through T93 are assessed an off-site shipping fee of $0.001 per pound.

2. Hazardous wastewaters, defined as containing less than 1 percent total organic carbon and less than 1 percent total suspended solids, shall be assessed an off-site shipping fee of $0.004 per pound.

3. Except for those hazardous wastes excluded from off-site shipment fees as provided in subparagraphs (d) of this paragraph, all remaining waste not claimed in part 1 or 2 above shall be assessed an off-site shipping fee of $0.0075 per pound.

4. The off-site shipping fee for any single generator shall not exceed $25,000 in any calendar year.

(d) Exclusions from Off-site Shipping Fees

1. Hazardous wastes that are recycled/recovered as defined by handling codes for treatment methods T30, T54, and T63, lead smelting, precious metals recovery, and/or high temperature metals recovery are exempt from off-site shipping fees.

2. Hazardous wastes generated from remediation or corrective actions required by the Tennessee Hazardous Waste Management Act of 1977 and 1983; the Resource Conservation and Recovery Act (42 U.S.C. 6901 et seq.); and the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. 9601 et seq.) shall not be subject to off-site shipping fees.

3. A Conditionally Exempt Small Quantity Generator does not owe this fee, if neither part (a)1 nor (a)2 of this paragraph is applicable.

4. Universal Wastes identified in Rule 1200-01-11-.12, and spent lead-acid batteries managed under Rule 1200-01-11-.09(7), are exempt from off-site shipping fees.

(e) Director's Option, case-by-case

The Director may include other handling codes for waste treatment methods in part (c)1 or part (d)1 of this paragraph on a case-by-case basis, based upon application by a generator.

(f) Date for Payment of Fees

These fees shall be paid no later than March 1 of each year for hazardous waste activities conducted the previous calendar year.

(6) Construction Inspection Fee

Prior to the beginning of any construction, at any unit, a permittee shall pay a Construction Inspection Fee for each item to be constructed based upon the class of modification of the item using Appendix I, Classification of Permit Modification, in Rule 1200-01-11-.07(10), as follows:

	Class 3*	Class 2	Class [1]1	Class 1
Storage Unit	$2,000	$1,500	$1,000	$200
Treatment Unit	$4,000	$3,000	$2,000	$400
Disposal Unit	$4,000	$3,000	$2,000	$400
Post Closure Unit	$4,000	$3,000	$2,000	$400

*Also applies to newly permitted units not as yet constructed.

(7) Mixed Wastes Treatment Plan Review Fee

Any person who requests approval by the Department of a mixed waste treatment plan is assessed a mixed waste treatment plan review fee that is equal to all cost associated with the Department's review of the initial mixed waste treatment plan, any update to the mixed waste treatment plan, and/or any revision(s) to the mixed waste treatment plan. Costs shall include, but not be limited to mileage, lab expense, the current hourly rate and benefits for the Department's employees actively involved in review activities, including preparation for and attendance at meetings, the current Department overhead rate, and costs billed by Department contractor(s). Costs shall not include Part A and Part B permit review expenses that are recovered through other applicable fees. The Department shall provide a person subject to this rule with quarterly statements reflecting review cost posted during the previous quarter. All review costs reflected on a person's quarterly statement shall be paid to the Department within thirty (30) days of their receipt of the invoice.

(8) Hazardous Waste Tipping Fee

(a) Fee Amount per Pounds Received

In addition to all other fees imposed by this Rule Chapter, Tennessee facilities with a hazardous waste treatment, storage, or disposal permit are assessed a hazardous waste tipping fee based on the amount of hazardous waste received from off-site as set forth below:

Pounds Received	Fee Amount
1 – 100,000 pounds	$ 1,000
100,001 – 500,000 pounds	$ 4,000
500,001 – 1,000,000 pounds	$ 7,000

1,000,001 – 5,000,000 pounds	$ 10,000
5,000,001 – 10,000,000 pounds	$ 15,000
10,000,001 – 20,000,000 pounds	$ 20,000
over 20,000,000 pounds	$ 25,000

(b) Recycle/Recovery Exemption

Hazardous wastes that are received for recycle/recovery as defined by handling codes for treatment methods T30, T54, and T63, lead smelting, precious metals recovery, and/or high temperature metals recovery are exempt from the hazardous waste tipping fees.

(c) Universal Waste Exemptions

Universal Wastes identified in Rule 1200-01-11-.12, and spent lead-acid batteries managed under Rule 1200-01-11-.09(7), are exempt from the hazardous waste tipping fees.

(d) Date for Payment of Fees

These fees shall be paid no later than March 1 of each year for hazardous waste activities conducted the previous calendar year beginning with the effective date of these rules.

(9) Special Report Review Fees

Any person who requests approval by the Department of any of the documents listed below is assessed a
review fee as follows:

10,000	dollars for a Trial Burn Plan for each type of unit
5,000	dollars for a Certificate of Compliance Plan for each type of unit
10,000	dollars for a Facility Risk Assessment and/or Risk Evaluation Plan associated with a land based unit
10,000	dollars for the initial Dispersion Model and Direct Human Health Risk Assessment
5,000	dollars for Periodic Modeling and Direct Human Health Risk Assessment

(10) Initial Spill and/or Accidental Discharge Investigation Fee

2,000	dollars for each spill or accidental discharge (of hazardous waste, or other material which, when spilled or discharged, becomes a hazardous waste) requiring investigation and/or remediation of soil, groundwater, or surface water and/or sediment, provided such investigation/remediation is overseen by the Division of Solid Waste Management.

(11) Chromium Exclusion Review Fee

500	dollars for each chromium waste stream applicable to the exclusion in Rule 1200-01-11-.02(1)(d)2(v).

Authority: T.C.A. §§68-212-107(d), 68-212-108, and 68-203-101 et seq.

1200-01-11-.09 Standards For The Management Of Specific Hazardous Wastes And Specific Types Of Hazardous Waste Management Facilities

(1) (RESERVED) [40 CFR 266 Subpart A]

(2) (RESERVED) [40 CFR 266 Subpart B]

(3) Recyclable Materials Used in a Manner Constituting Disposal [40 CFR 266 Subpart C]

(a) Applicability [40 CFR 266.20]

1. The regulations of this paragraph apply to recyclable materials that are applied to or placed on the land:

(i) Without mixing with any other substance(s); or

(ii) After mixing or combination with any other substance(s). These materials will be referred to throughout this subpart as "materials used in a manner that constitutes disposal."

2. Products produced for the general public's use that are used in a manner that constitutes disposal and that contain recyclable materials are not presently subject to regulation if the recyclable materials have undergone a chemical reaction in the course of producing the products so as to become inseparable by physical means and if such products meet the applicable treatment standards in Rule 1200-01-11-.10(3) (or applicable prohibition levels in Rule 1200-01-11-.10(2)(c), where no treatment standards have been established) for each recyclable material (i.e., hazardous waste) that they contain.

3. Anti-skid/deicing uses of slags, which are generated from high temperature metals recovery (HTMR) processing of hazardous waste K061, K062, and F006, in a manner constituting disposal are not covered by the exemption in part 2 of this subparagraph and remain subject to regulation.

4. Fertilizers that contain recyclable materials are not subject to regulation provided that:

(i) They are zinc fertilizers excluded from the definition of solid waste according to subpart (1)(d)1(xxiii) of Rule 1200-01-11-.02; or

(ii) They meet the applicable treatment standards in paragraph (3) of Rule 1200-01-11-.10 for each hazardous waste that they contain.

(b) Standards Applicable to Generators and Transporters of Materials Used in a Manner That Constitute Disposal [40 CFR 266.21]

Generators and transporters of materials that are used in a manner that constitutes disposal are subject to the applicable requirements of Rule 1200-01-11-.03 (including the notification requirement under paragraph (2) of that Rule) and Rule 1200-01-11-.04.

(c) Standards Applicable to Storers of Materials That Are to be Used in a Manner That Constitutes Disposal Who Are Not the Ultimate Users [40 CFR 266.22]

Owners or operators of facilities that store recyclable materials that are to be used in a manner that constitutes disposal, but who are not the ultimate users of the materials, are regulated under all applicable provisions of Rule 1200-01-11-.05(1) through (12), Rule

1200-01-11-.06(1) through (12), Rule 1200-01-11-.07, and the notification requirement under Rule 1200-01-11-.03(2).

(d) Standards Applicable to Users of Materials That Are Used in a Manner That Constitutes Disposal [40 CFR 266.23]

1. Owners or operators of facilities that use recyclable materials in a manner that constitutes disposal are regulated under all applicable provisions of Rules 1200-01-11-.05(1) through (14), Rule 1200-01-11-.06(1) through (14), Rules 1200-01-11-.07 and .10, and the notification requirement under Rule 1200-01-11-.03(2). (These requirements do not apply to products which contain these recyclable materials under the provisions of part (a)2 of this paragraph.)

2. The use of waste or used oil or other material, which is contaminated with dioxin or any other hazardous waste (other than a waste identified solely on the basis of ignitability), for dust suppression or road treatment is prohibited.

(4) (RESERVED) [40 CFR 266 Subpart D]

(5) (RESERVED) [40 CFR 266 Subpart E]

(6) Recyclable Materials Utilized for Precious Metal Recovery [40 CFR 266 Subpart F]

(a) Applicability and Requirements [40 CFR 266.70]

1. The regulations of this paragraph apply to recyclable materials that are reclaimed to recover economically significant amounts of gold, silver, platinum, palladium, iridium, osmium, rhodium, ruthenium, or any combination of these.

2. Persons who generate, transport, or store recyclable materials that are regulated under this paragraph are subject to the following requirements:

(i) Notification requirements under Rule 1200-01-11-.03(2);

(ii) Paragraph (3) of Rule 1200-01-11-.03 (for generators), Rules 1200-01-11-.04(3)(a) and (b) (for transporters), and Rules 1200-01-11-.05(5)(b) and (c) (for persons who store); and

(iii) (Reserved) [40 CFR 266.70(b)(3)]

3. Persons who store recycled materials that are regulated under this paragraph must keep the following records to document that they are not accumulating these materials speculatively (as defined in Rule 1200-01-11-.02(1)(a)3):

(i) Records showing the volume of these materials stored at the beginning of the calendar year;

(ii) The amount of these materials generated or received during the calendar year; and

(iii) The amount of materials remaining at the end of the calendar year.

4. Recyclable materials that are regulated under this paragraph that are accumulated speculatively (as defined in Rule 1200-01-11-.02(1)(a)3) are subject to all applicable provisions of Rules 1200-01-11-.03 through .07.

(7) Spent Lead-Acid Batteries Being Reclaimed [40 CFR 266 Subpart G]

(a) Applicability and Requirements [40 CFR 266.80]

1. Are spent lead-acid batteries exempt from hazardous waste management requirements? If you generate, collect, transport, store, or regenerate lead-acid batteries for reclamation purposes, you may be exempt from certain hazardous waste management requirements. Use the following table to determine which requirements apply to you. Alternatively, you may choose to manage your spent lead-acid batteries under the ``Universal Waste'' rule in Rule 1200-01-11-.12.

If your batteries * * *	And if you * * *	Then you * * *	And you * * *
(1) Will be reclaimed through regeneration (such as by electrolyte replacement).		are exempt from Rules 1200-01-11-.03 (except for .03(1)(b)) through .07, .09, and .10 including the notification requirement of Rule 1200-01-11-.03(2).	are subject to Rules 1200-01-11-.02 and .03(1)(b).
(2) Will be reclaimed other than through regeneration.	generate, collect, and/or transport these batteries.	are exempt from Rules 1200-01-11-.03 (except for .03(1)(b)) through .07 and .09, including the notification requirement of Rule 1200-01-11-.03(2).	are subject to Rules 1200-01-11-.02 and .03(1)(b),and applicable provisions under Rule 1200-01-11-.10.
(3) Will be reclaimed other than through regeneration.	store these batteries but you aren't the reclaimer.	are exempt from Rules 1200-01-11-.03 (except for .03(1)(b)) through .07 and .09, including the notification requirement of Rule 1200-01-11-.03(2).	are subject to Rules 1200-01-11-.02, .03(1)(b),and applicable provisions under Rule 1200-01-11-.10.
(4) Will be reclaimed other than through regeneration.	store these batteries before you reclaim them.	must comply with part 2 of this subparagraph and as appropriate other regulator provisions described in part 2 of this subparagraph.	are subject to Rules 1200-01-11-.02, .03(1)(b),and applicable provisions under Rule 1200-01-11-.10.
(5) Will be reclaimed other than through regeneration.	don't store these batteries before you reclaim them.	are exempt from Rules 1200-01-11-.03 (except for .03(1)(b)) through .07 and .09, including the notification requirement of Rule 1200-01-11-.03(2).	are subject to Rules 1200-01-11-.02, .03(1)(b),and applicable provisions under Rule 1200-01-11-.10.

2. If I store spent lead-acid batteries before I reclaim them but not through regeneration, which requirements apply? The requirements of part 2 of this

subparagraph apply to you if you store spent lead-acid batteries before you reclaim them, but you don't reclaim them through regeneration. The requirements are slightly different depending on your Hazardous Waste permit status.

(i) For Interim Status Facilities, you must comply with:

(I) Notification requirements under Rule 1200-01-11-.03(2).

(II) All applicable provisions in paragraph (1) of Rule 1200-01-11-.05.

(III) All applicable provisions in paragraph (2) of Rule 1200-01-11-.05. except Rule 1200-01-11-.05(2)(d) (waste analysis).

(IV) All applicable provisions in paragraphs (3) and (4) of Rule 1200-01-11-.05.

(V) All applicable provisions in paragraph (5) of Rule 1200-01-11-.05. except .05(5)(b) and (c) (dealing with the use of the manifest and manifest discrepancies).

(VI) All applicable provisions in paragraphs (6) through (12) of Rule 1200-01-11-.05.

(VII) All applicable provisions in Rule 1200-01-11-.07.

(ii) For Permitted Facilities.

(I) Notification requirements under Rule 1200-01-11-.03(2).

(II) All applicable provisions in paragraph (1) of Rule 1200-01-11-.06.

(III) All applicable provisions in paragraph (2) of Rule 1200-01-11-.06 but not Rule 1200-01-11-.06(2)(d) (waste analysis).

(IV) All applicable provisions in paragraph (3) and (4) of Rule 1200-01-11-.06

(V) All applicable provisions in paragraph (5) of Rule 1200-01-11-.06 but not Rules 1200-01-11-.06(5)(b) or (c) (dealing with the use of the manifest and manifest discrepancies).

(VI) All applicable provisions in paragraphs (6) through (12) of Rule 1200-01-11-.06.

(VII) All applicable provisions in Rule 1200-01-11-.07.

(8) Hazardous Waste Burned in Boilers and Industrial Furnaces [40 CFR 266 Subpart H]

(a) Applicability [40 CFR 266.100]

Owners and operators of existing facilities referenced in this paragraph who have submitted information to the EPA as required by the Federal regulations prior to February 14, 1992, the effective date of this Regulation, shall not be required to resubmit that information to the Department unless specifically required to do so by the Department.

1. The regulations of this paragraph apply to hazardous waste burned or processed in a boiler or industrial furnace (as defined in Rule 1200-01-11-.01(2)(a)) irrespective of the purpose of burning or processing, except as provided by parts 2, 3, 4, 7, and 8 of this subparagraph. In this paragraph, the term "burn" means burning for energy recovery or destruction, or processing for materials recovery or as an ingredient. The emissions standards of subparagraphs (e), (f), (g), and (h) of this paragraph apply to facilities operating under interim status or under a permit as specified in subparagraphs (c) and (d) of this paragraph.

2. Integration of the MACT standards

(i) Except as provided by subparts 2(ii), 2(iii), and 2(iv) of this subparagraph, the standards of this Rule do not apply to a new hazardous waste boiler or industrial furnace unit that becomes subject to RCRA permit requirements after October 12, 2005; or no longer apply when an owner or operator of an existing hazardous waste boiler or industrial furnace unit 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 63.1210(d) documenting compliance with the requirements of 40 CFR 63 Subpart EEE. Nevertheless, even after this demonstration of compliance with the MACT standards, RCRA permit conditions that were based on the standards of this Rule will continue to be in effect until they are removed from the permit or the permit is terminated or revoked unless the permit expressly provides otherwise.

(ii) The following standards continue to apply:

(I) If you elect to comply with item (12)(a)1(i)(I) of Rule 1200-01-11-.07 to minimize emissions of toxic compounds from startup, shutdown, and malfunction events, subpart (c)5(i) of this paragraph requiring operations in accordance with the operating requirements specified in the permit at all times that hazardous waste is in the unit, and item (c)5(ii)(III) of this subparagraph requiring compliance with the emission standards and operating requirements during startup and shutdown if hazardous waste is in the combustion chamber, except for particular hazardous wastes. These provisions apply only during startup, shutdown, and malfunction events;

(II) The closure requirements of subpart (8)(c)5(xi) and part (8)(d)12 of this Rule;

(III) The standards for direct transfer of subparagraph (8)(1) of this Rule;

(IV) The standards for regulation of residues of subparagraph (8)(m) of this Rule; and

(V) The applicable requirements of paragraphs (1) through (8), (28), and (29) of Rule 1200-01-11-.05 and paragraphs (1) through (8), (31), and (32) of Rule 1200-01-11-.06.

(iii) If you own or operate a boiler or hydrochloric acid production furnace that is an area source under 40 CFR 63.2 and you elect not to comply with the emission standards under 40 CFR 63.1216, 63.1217, and 63.1218 for particulate matter, semivolatile and low volatile metals, and total chlorine, you also remain subject to:

(I) Subparagraph (f) of this paragraph--Standards to control particulate matter;

(II) Subparagraph (g) of this paragraph--Standards to control metals emissions, except for mercury; and

(III) Subparagraph (h) of this paragraph--Standards to control hydrogen chloride and chlorine gas.

(iv) The particulate matter standard of subparagraph (f) of this paragraph remains in effect for boilers that elect to comply with the alternative to the particulate matter standard under 40 CFR 63.1216(e) and 63.1217(e).

3. The following hazardous wastes and facilities are not subject to regulation under this paragraph:

(i) Used oil burned for energy recovery that is also a hazardous waste solely because it exhibits a characteristic of hazardous waste identified in Rule 1200-01-11-.02(3). Such used oil is subject to regulation under Rule 1200-01-11-.11;

(ii) Gas recovered from hazardous or solid waste landfills when such gas is burned for energy recovery;

(iii) Hazardous wastes that are exempt from regulation under Rule 1200-01-11-.02(1)(d) and Rule 1200-01-11-.02(1)(f)1(iii)(III) and (IV), and hazardous wastes that are subject to the special requirements for conditionally exempt small quantity generators under Rules 1200-01-11-.02(1)(e); and

(iv) Coke ovens, if the only hazardous waste burned is Hazardous Waste Code K087, decanter tank tar sludge from coking operations.

4. Owners and operators of smelting, melting, and refining furnaces (including pyrometallurgical devices such as cupolas, sintering machines, roasters, and foundry furnaces, but not including cement kilns, aggregate kilns, or halogen acid furnaces burning hazardous waste) that process hazardous waste solely for metal recovery are conditionally exempt from regulation under this paragraph, except for subparagraphs (b) and (m) of this paragraph.

(i) To be exempt from subparagraphs (c) through (l) of this paragraph, an owner or operator of a metal recovery furnace or mercury recovery furnace must comply with the following requirements, except that an owner or operator of a lead or a nickel-chromium recovery furnace, or a metal recovery furnace that burns baghouse bags used to capture metallic dusts emitted by steel manufacturing, must comply with the requirements of subpart (iii) of this part, and owners or operators of lead recovery furnaces that are subject to regulation under the Secondary Lead Smelting NESHAP must comply with the requirements of part 8 of this subparagraph:

(I) Provide a one-time written notice to the Commissioner indicating the following:

I. The owner or operator claims exemption under this subpart;

II. The hazardous waste is burned solely for metal recovery consistent with the provisions of subpart 4(ii) of this subparagraph;

III. The hazardous waste contains recoverable levels of metals; and

IV. The owner or operator will comply with the sampling and analysis and recordkeeping requirements of this subpart;

(II) Sample and analyze the hazardous waste and other feedstocks as necessary to comply with the requirements of this subpart by using appropriate methods; and

(III) Maintain at the facility for at least three years records to document compliance with the provisions of this subpart including limits on levels of toxic organic constituents and Btu value of the waste, and levels of recoverable metals in the hazardous waste compared to normal nonhazardous waste feedstocks.

(ii) A hazardous waste meeting either of the following criteria is not processed solely for metal recovery:

(I) The hazardous waste has a total concentration of organic compounds listed in Appendix VIII of Rule 1200-01-11-.02 exceeding 500 ppm by weight, as-fired, and so is considered to be burned for destruction. The concentration of organic compounds in a waste as-generated may be reduced to the 500 ppm limit by bona fide treatment that removes or destroys organic constituents. Blending for dilution to meet the 500 ppm limit is prohibited and documentation that the waste has not been impermissibly diluted must be retained in the records required by item 4(i)(III) of this subparagraph; or

(II) The hazardous waste has a heating value of 5,000 Btu/lb or more, as-fired, and so is considered to be burned as fuel. The heating value of a waste as-generated may be reduced to below the 5,000 Btu/lb limit by bona fide treatment that removes or destroys organic constituents. Blending for dilution to meet the 5,000 Btu/lb limit is prohibited and documentation that the waste has not been impermissibly diluted must be retained in the records required by item 4(i)(III) of this subparagraph.

(iii) To be exempt from subparagraphs (c) through (l) of this paragraph, an owner or operator of a lead or nickel-chromium or mercury recovery furnace (except for owners or operators of lead recovery furnaces subject to regulation under the Secondary Lead Smelting NESHAP) or a metal recovery furnace that burns baghouse bags used to capture

metallic dusts emitted by steel manufacturing, must provide a one-time written notice to the Commissioner identifying each hazardous waste burned and specifying whether the owner or operator claims an exemption for each waste under this subpart or subpart 4(i) of this subparagraph. The owner or operator must comply with the requirements of subpart 4(i) of this subparagraph for those wastes claimed to be exempt under that subpart and must comply with the requirements below for those wastes claimed to be exempt under this subpart.

(I) The hazardous wastes listed in Appendices XI, XII, and XIII of this Rule, and baghouse bags used to capture metallic dusts emitted by steel manufacturing are exempt from the requirements of subpart 4(i) of this subparagraph, provided that:

I. A waste listed in Appendix XI of this Rule must contain recoverable levels of lead, a waste listed in Appendix XII of this Rule must contain recoverable levels of nickel or chromium, a waste listed in Appendix XIII of this Rule must contain recoverable levels of mercury and contain less than 500 ppm of Rule 1200-01-11-.02, Appendix VIII organic constituents, and baghouse bags used to capture metallic dusts emitted by steel manufacturing must contain recoverable levels of metal; and

II. The waste does not exhibit the Toxicity Characteristic of Rule 1200-01-11-.02(3)(e) for an organic constituent; and

III. The waste is not a hazardous waste listed in Rule 1200-01-11-.02(4) because it is listed for an organic constituent as identified in Appendix VII of Rule 1200-01-11-.02; and

IV. The owner or operator certifies in the one-time notice that hazardous waste is burned under the provisions of subpart 4(iii) of this subparagraph and that sampling and analysis will be conducted or other information will be obtained as necessary to ensure continued compliance with these requirements. Sampling and analysis shall be conducted according to item 4(i)(II) of this subparagraph and records to document compliance with subpart 4(iii) of this subparagraph shall be kept for at least three years.

(II) The Commissioner may decide on a case-by-case basis that the toxic organic constituents in a material listed in Appendix XI, XII, or XIII of this Rule that contains a total concentration of more than 500 ppm toxic organic compounds listed in Appendix VIII of Rule 1200-01-11-.02, may pose a hazard to human health and the environment when burned in a metal recovery furnace exempt from the requirements of this paragraph. In that situation, after adequate notice and opportunity for comment, the metal recovery furnace will become subject to the requirements of this paragraph when burning that material. In making the hazard

determination, the Commissioner will consider the following factors:

I. The concentration and toxicity of organic constituents in the material;

II. The level of destruction of toxic organic constituents provided by the furnace; and

III. Whether the acceptable ambient levels established in Appendices IV or V of this Rule may be exceeded for any toxic organic compound that may be emitted based on dispersion modeling to predict the maximum annual average off-site ground level concentration.

5. The standards for direct transfer operations under subparagraph (l) of this paragraph apply only to facilities subject to the permit standards of subparagraph (c) of this paragraph or the interim status standards of subparagraph (d) of this paragraph.

6. The management standards for residues under subparagraph (m) of this paragraph apply to any boiler or industrial furnace burning hazardous waste.

7. Owners and operators of smelting, melting, and refining furnaces (including pyrometallurgical devices such as cupolas, sintering machines, roasters, and foundry furnaces) that process hazardous waste for recovery of economically significant amounts of the precious metals gold, silver, platinum, palladium, iridium, osmium, rhodium, or ruthenium, or any combination of these are conditionally exempt from regulation under this paragraph, except for subparagraph (m) of this paragraph. To be exempt from subparagraph (b) through (l) of this paragraph, an owner or operator must:

(i) Provide a one-time written notice to the Commissioner indicating the following:

(I) The owner or operator claims exemption under this part;

(II) The hazardous waste is burned for legitimate recovery of precious metal; and

(III) The owner or operator will comply with the sampling and analysis and recordkeeping requirements of this part; and

(ii) Sample and analyze the hazardous waste as necessary to document that the waste contains economically significant amounts of metals and that the treatment recovers economically significant amounts of precious metal; and

(iii) Maintain at the facility for at least three years records to document that all hazardous wastes burned are burned for recovery of economically significant amounts of precious metal.

8. Starting June 23, 1997, owners or operators of lead recovery furnaces that process hazardous waste for recovery of lead and that are subject to regulation under the Secondary Lead Smelting NESHAP, are conditionally exempt from regulation under this part, except for subparagraph (b) of this paragraph. To be

exempt, an owner or operator must provide a one-time notice to the Commissioner identifying each hazardous waste burned and specifying that the owner or operator claims an exemption under this part. The notice also must state that the waste burned has a total concentration of nonmetal compounds listed in Appendix VIII of Rule 1200-01-11-.02 of less than 500 ppm by weight, as fired and as provided in item 4(ii)(I) of this subparagraph, or is listed in Appendix XI to this Rule.

(b) Management Prior to Burning [40 CFR 266.101]

1. Generators

Generators of hazardous waste that is burned in a boiler or industrial furnace are subject to Rule 1200-01-11-.03.

2. Transporters

Transporters of hazardous waste that is burned in a boiler or industrial furnace are subject to Rule 1200-01-11-.04.

3. Storage and Treatment Facilities

(i) Owners and operators of facilities that store or treat hazardous waste that is burned in a boiler or industrial furnace are subject to the applicable provisions of Rules 1200-01-11-.05, .06, and .07, except as provided by subpart 3(ii) of this subparagraph. These standards apply to storage and treatment by the burner as well as to storage and treatment facilities operated by intermediaries (processors, blenders, distributors, etc.) between the generator and the burner.

(ii) Owners and operators of facilities that burn, in an onsite boiler or industrial furnace exempt from regulation under the small quantity burner provisions of subparagraph (i) of this paragraph, hazardous waste that they generate are exempt from the regulations of Rules 1200-01-11-.05, .06, and .07 applicable to storage units for those storage units that store mixtures of hazardous waste and the primary fuel to the boiler or industrial furnace in tanks that feed the fuel mixture directly to the burner. Storage of hazardous waste prior to mixing with the primary fuel is subject to regulation as prescribed in subpart 3(i) of this subparagraph.

(c) Permit Standards for Burners [40 CFR 266.102]

1. Applicability

(i) General

Owners and operators of boilers and industrial furnaces burning hazardous waste and not operating under interim status must comply with the requirements of this subparagraph, Rule 1200-01-11-.07(5)(b)8 and Rule 1200-01-11-.07(1)(j), unless exempt under the small quantity burner exemption of subparagraph (i) of this paragraph.

(ii) Applicability of Rule 1200-01-11-.07 Standards

Owners and operators of boilers and industrial furnaces that burn hazardous waste are subject to the following provisions of Rule 1200-01-11-.06, except as provided otherwise by this paragraph:

(I) In paragraph (1) (General), Rule 1200-01-11-.06;

(II) In paragraph (2) (General facility standards), Rules 1200-01-11-.06(2)(b)-(i);

(III) In paragraph (3) (Preparedness and prevention), Rules 1200-01-11-.06(3)(b)-(h);

(IV) In paragraph (4) (Contingency plan and emergency procedures), Rules 1200-01-11-.06(4)(b)-(g);

(V) In paragraph (5) (Manifest system, recordkeeping, and reporting), the applicable provisions of Rules 1200-01-11-.06(5)(b)-(h);

(VI) In paragraph (6) (Releases from Solid Waste Management Units), Rules 1200-01-11-.06(6)(a)-(l);

(VII) In paragraph (7) (Closure and post-closure), Rules 1200-01-11-.06(7)(b)-(f);

(VIII) In paragraph (8) (Financial requirements), Rules 1200-01-11-.06(8)(b), (c), (d), and (n)-(r), except that States and the Federal government are exempt from the requirements of paragraph (8); and

(IX) In paragraph (31) (Air emission standards for equipment leaks), except Rule 1200-01-11-.06(31)(a)1.

2. Hazardous Waste Analysis

(i) The owner or operator must provide an analysis of the hazardous waste that quantifies the concentration of any constituent identified in Appendix VIII of Rule 1200-01-11-.02 that may reasonably be expected to be in the waste. Such constituents must be identified and quantified if present, at levels detectable by using appropriate analytical procedures. The Appendix VIII, Rule 1200-01-11-.02 constituents excluded from this analysis must be identified and the basis for their exclusion explained. This analysis will be used to provide all information required by this paragraph and Rule 1200-01-11-.07(5)(b)8 and Rule 1200-01-11-.07(1)(j) and to enable the permit writer to prescribe such permit conditions as necessary to protect human health and the environment. Such analysis must be included as a portion of the part B permit application, or, for facilities operating under the interim status standards of this paragraph , as a portion of the trial burn plan that may be submitted before the part B application under provisions of Rule 1200-01-11-.07(1)(j)6 as well as any other analysis required by the permit authority in preparing the permit. Owners and operators of boilers and industrial furnaces not operating under the interim status standards must provide the information required by Rules 1200-01-11-.07(5)(b)8 or Rule 1200-01-11-.07(1)(j)3 in the part B application to the greatest extent possible.

(ii) Throughout normal operation, the owner or operator must conduct sampling and analysis as necessary to ensure that the hazardous waste, other fuels, and industrial furnace feedstocks fired into the boiler or industrial furnace are within the physical and chemical composition limits specified in the permit.

3. Emissions Standards

Owners and operators must comply with emissions standards provided by subparagraphs (e) through (h) of this paragraph.

4. Permits

(i) The owner or operator may burn only hazardous wastes specified in the facility permit and only under the operating conditions specified under part 5 of this subparagraph, except in approved trial burns under the conditions specified in Rule 1200-01-11-.07(1)(j).

(ii) Hazardous wastes not specified in the permit may not be burned until operating conditions have been specified under a new permit or permit modification, as applicable. Operating requirements for new wastes may be based on either trial burn results or alternative data included with part B of a permit application under Rule 1200-01-11-.07(5)(b)8.

(iii) Boilers and industrial furnaces operating under the interim status standards of subparagraph (d) of this paragraph are permitted under procedures provided by Rule 1200-01-11-.07(1)(j)7.

(iv) A permit for a new boiler or industrial furnace (those boilers and industrial furnaces not operating under the interim status standards) must establish appropriate conditions for each of the applicable requirements of this subparagraph, including but not limited to allowable hazardous waste firing rates and operating conditions necessary to meet the requirements of part 5 of this subparagraph, in order to comply with the following standards:

(I) For the period beginning with initial introduction of hazardous waste and ending with initiation of the trial burn, and only for the minimum time required to bring the device to a point of operational readiness to conduct a trial burn, not to exceed a duration of 720 hours operating time when burning hazardous waste, the operating requirements must be those most likely to ensure compliance with the emission standards of subparagraphs (e) through (h) of this paragraph, based on the Commissioner's engineering judgment. If the applicant is seeking a waiver from a trial burn to demonstrate conformance with a particular emission standard, the operating requirements during this initial period of operation shall include those specified by the applicable provisions of subparagraph (e), (f), (g), or (h) of this paragraph. The Commissioner may extend the duration of this period for up to 720 additional hours when good cause for the extension is demonstrated by the applicant.

(II) For the duration of the trial burn, the operating requirements must be sufficient to demonstrate compliance with the emissions

standards of subparagraphs (e) through (h) of this paragraph and must be in accordance with the approved trial burn plan;

(III) For the period immediately following completion of the trial burn, and only for the minimum period sufficient to allow sample analysis, data computation, submission of the trial burn results by the applicant, review of the trial burn results and modification of the facility permit by the Commissioner to reflect the trial burn results, the operating requirements must be those most likely to ensure compliance with the emission standards subparagraphs (e) through (h) of this paragraph based on the Commissioner's engineering judgment.

(IV) For the remaining duration of the permit, the operating requirements must be those demonstrated in a trial burn or by alternative data specified in Rule 1200-01-11-.07(5)(b)8, as sufficient to ensure compliance with the emissions standards of subparagraphs (e) through (h) of this paragraph.

5. Operating Requirements

(i) General

A boiler or industrial furnace burning hazardous waste must be operated in accordance with the operating requirements specified in the permit at all times where there is hazardous waste in the unit.

(ii) Requirements to ensure compliance with the organic emissions standards

(I) DRE Standard

Operating conditions will be specified either on a case-by-case basis for each hazardous waste burned as those demonstrated (in a trial burn or by alternative data as specified in Rule 1200-01-11-.07(5)(b)8) to be sufficient to comply with the destruction and removal efficiency (DRE) performance standard of part (e)1 of this paragraph or as those special operating requirements provided by subpart (e)1(iv) of this paragraph for the waiver of the DRE trial burn. When the DRE trial burn is not waived under subpart (e)1(iv) of this paragraph, each set of operating requirements will specify the composition of the hazardous waste (including acceptable variations in the physical and chemical properties of the hazardous waste which will not affect compliance with the DRE performance standard) to which the operating requirements apply. For each such hazardous waste, the permit will specify acceptable operating limits including, but not limited to, the following conditions as appropriate:

I. Feed rate of hazardous waste and other fuels measured and specified as prescribed in subpart 5(vi) of this subparagraph;

II. Minimum and maximum device production rate when producing normal product expressed in appropriate

units, measured and specified as prescribed in subpart 5(vi) of this subparagraph;

III. Appropriate controls of the hazardous waste firing system;

IV. Allowable variation in boiler and industrial furnace system design or operating procedures;

V. Minimum combustion gas temperature measured at a location indicative of combustion chamber temperature, measured and specified as prescribed in subpart 5(vi) of this subparagraph;

VI. An appropriate indicator of combustion gas velocity, measured and specified as prescribed in subpart 5(vi) of this subparagraph, unless documentation is provided under Rule 1200-01-11-.07(1)(j) demonstrating adequate combustion gas residence time; and

VII. Such other operating requirements as are necessary to ensure that the DRE performance standard of subparagraph (e) of this paragraph is met.

(II) Carbon monoxide and hydrocarbon standards. The permit must incorporate a carbon monoxide (CO) limit and, as appropriate, a hydrocarbon (HC) limit as provided by parts (e)2, 3, 4, 5, and 6 of this paragraph. The permit limits will be specified as follows:

I. When complying with the CO standard of subpart (e)2(i) of this paragraph, the permit limit is 100 ppmv;

II. When complying with the alternative CO standard under part (e)3 of this paragraph, the permit limit for CO is based on the trial burn and is established as the average over all valid runs of the highest hourly rolling average CO level of each run, and the permit limit for HC is 20 ppmv (as defined in subpart (e)3(i) of this paragraph), except as provided in part (e)6 of this paragraph.

III. When complying with the alternative HC limit for industrial furnaces under part (e)6 of this paragraph, the permit limit for HC and CO is the baseline level when hazardous waste is not burned as specified by that part.

(III) Start-up and shut-down. During start-up and shut-down of the boiler or industrial furnace, hazardous waste (except waste fed solely as an ingredient under the Tier I (or adjusted Tier I) feed rate screening limits for metals and chloride/chlorine, and except low risk waste exempt from the trial burn requirements under subpart (e)(1)(v) and subparagraphs (f), (g), and (h) of this paragraph) must not be fed into the device unless the device is operating within the conditions of operation specified in the permit.

(iii) Requirements to Ensure Conformance with the Particulate Standard

(I) Except as provided in items 5(iii)(II) and (III) of this subparagraph, the permit shall specify the following operating requirements to ensure conformance with the particulate standard specified in subparagraph (f) of this paragraph:

I. Total ash feed rate to the device from hazardous waste, other fuels, and industrial furnace feedstocks, measured and specified as prescribed in subpart 5(vi) of this subparagraph;

II. Maximum device production rate when producing normal product expressed in appropriate units, and measured and specified as prescribed in subpart 5(vi) of this subparagraph;

III. Appropriate controls on operation and maintenance of the hazardous waste firing system and any air pollution control system;

IV. Allowable variation in boiler and industrial furnace system design including any air pollution control system or operating procedures; and

V. Such other operating requirements as are necessary to ensure that the particulate standard in part (f)1 of this paragraph is met.

(II) Permit conditions to ensure conformance with the particulate matter standard shall not be provided for facilities exempt from the particulate matter standard under part (f)2 of this paragraph;

(III) For cement kilns and light-weight aggregate kilns, permit conditions to ensure compliance with the particulate standard shall not limit the ash content of hazardous waste or other feed materials.

(iv) Requirements to Ensure Conformance with the Metals Emissions Standard

(I) For conformance with the Tier I (or adjusted Tier I) metals feed rate screening limits of parts (g)2 or 5 of this paragraph, the permit shall specify the following operating requirements:

I. Total feed rate of each metal in hazardous waste, other fuels, and industrial furnace feedstocks measured and specified under provisions of subpart 5(vi) of this subparagraph;

II. Total feed rate of hazardous waste measured and specified as prescribed in subpart 5(vi) of this subparagraph;

III. A sampling and metals analysis program for the hazardous waste, other fuels, and industrial furnace feedstocks;

(II) For conformance with the Tier II metals emission rate screening limits under part (g)3 of this paragraph and the Tier III metals controls under part (g)4 of this paragraph the permit shall specify the following operating requirements:

I. Maximum emission rate for each metal specified as the average emission rate during the trial burn;

II. Feed rate of total hazardous waste and pumpable hazardous waste, each measured and specified as prescribed in item 5(vi)(I) of this subparagraph;

III. Feed rate of each metal in the following feedstreams, measured and specified as prescribed in subpart 5(vi) of this subparagraph:

A. Total feed streams;

B. Total hazardous waste feed; and

C. Total pumpable hazardous waste feed;

IV. Total feed rate of chlorine and chloride in total feed streams measured and specified as prescribed in subpart 5(vi) of this subparagraph;

V. Maximum combustion gas temperature measured at a location indicative of combustion chamber temperature, and measured and specified as prescribed in subpart 5(vi) of this subparagraph;

VI. Maximum flue gas temperature at the inlet to the particulate matter air pollution control system measured and specified as prescribed in subpart 5(vi) of this subparagraph;

VII. Maximum device production rate when producing normal product expressed in appropriate units and measured and specified as prescribed in subpart 5(vi) of this subparagraph;

VIII. Appropriate controls on operation and maintenance of the hazardous waste firing system and any air pollution control system;

IX. Allowable variation in boiler and industrial furnace system design including any air pollution control system or operating procedures; and

X. Such other operating requirements as are necessary to ensure that the metals standards under parts (g)3 or (g)4 of this paragraph are met.

(III) For conformance with an alternative implementation approach approved by the Commissioner under part (g)6 of this

paragraph, the permit will specify the following operating requirements:

I. Maximum emission rate for each metal specified as the average emission rate during the trial burn;

II. Feed rate of total hazardous waste and pumpable hazardous waste, each measured and specified as prescribed in item 5(vi)(I) of this subparagraph;

III. Feed rate of each metal in the following feedstreams, measured and specified as prescribed in subpart 5(vi) of this subparagraph:

A. Total hazardous waste feed; and

B. Total pumpable hazardous waste feed;

IV. Total feed rate of chlorine and chloride in total feed streams measured and specified prescribed in subpart 5(vi) of this subparagraph;

V. Maximum combustion gas temperature measured at a location indicative of combustion chamber temperature, and measured and specified as prescribed in subpart 5(vi) of this subparagraph;

VI. Maximum flue gas temperature at the inlet to the particulate matter air pollution control system measured and specified as prescribed in subpart 5(vi) of this subparagraph;

VII. Maximum device production rate when producing normal product expressed in appropriate units and measured and specified as prescribed in subpart 5(vi) of this subparagraph;

VIII. Appropriate controls on operation and maintenance of the hazardous waste firing system and any air pollution control system;

IX. Allowable variation in boiler and industrial furnace system design including any air pollution control system or operating procedures; and

X. Such other operating requirements as are necessary to ensure that the metals standards under parts (g)3 or (g)4 of this subparagraph are met.

(v) Requirements to Ensure Conformance with the Hydrogen Chloride and Chlorine Gas Standards

(I) For conformance with the Tier I total chloride and chlorine feed rate screening limits of subpart (h)2(i) of this paragraph, the permit will specify the following operating requirements:

I. Feed rate of total chloride and chlorine in hazardous waste, other fuels, and industrial furnace feedstocks measured and specified as prescribed in subpart 5(vi) of this subparagraph;

II. Feed rate of total hazardous waste measured and specified as prescribed in subpart 5(vi) of this subparagraph;

III. A sampling and analysis program for total chloride and chlorine for the hazardous waste, other fuels, and industrial furnace feedstocks;

(II) For conformance with the Tier II HCl and Cl_2 emission rate screening limits under subpart (h)2(ii) of this paragraph and the Tier III HCl and Cl_2 controls under part (h)3 of this paragraph, the permit will specify the following operating requirements:

I. Maximum emission rate for HCl and for Cl_2 specified as the average emission rate during the trial burn;

II. Feed rate of total hazardous waste measured and specified as prescribed in subpart 5(vi) of this subparagraph;

III. Total feed rate of chlorine and chloride in total feed streams, measured and specified as prescribed in subpart 5(vi) of this subparagraph;

IV. Maximum device production rate when producing normal product expressed in appropriate units, measured and specified as prescribed in subpart 5(vi) of this subparagraph;

V. Appropriate controls on operation and maintenance of the hazardous waste firing system and any air pollution control system;

VI. Allowable variation in boiler and industrial furnace system design including any air pollution control system or operating procedures; and

VII. Such other operating requirements as are necessary to ensure that the HCl and Cl_2 standards under subpart (h)2(ii) or part (h)3 of this paragraph are met.

(vi) Measuring Parameters and Establishing Limits Based on Trial Burn Data

(I) General Requirements

As specified in subpart 5(ii) through 5(v) of this subparagraph, each operating parameter shall be measured, and permit limits on the parameter shall be established, according to either of the following procedures:

I. Instantaneous Limits

A parameter may be measured and recorded on an instantaneous basis (i.e., the value that occurs at any time) and the permit limit specified as the time-weighted average during all valid runs of the trial burn; or

II. Hourly Rolling Average

A. The limit for a parameter may be established and continuously monitored on an hourly rolling average basis defined as follows:

(A) A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each 15 seconds, and computes and records the average value at least every 60 seconds.

(B) An hourly rolling average is the arithmetic mean of the 60 most recent 1-minute average values recorded by the continuous monitoring system.

B. The permit limit for the parameter shall be established based on trial burn data as the average over all valid test runs of the highest hourly rolling average value for each run.

(II) Rolling Average Limits for Carcinogenic Metals and Lead

Feed rate limits for the carcinogenic metals (i.e., arsenic, beryllium, cadmium and chromium) and lead may be established either on an hourly rolling average basis as prescribed by item 5(vi)(I) of this subparagraph or on (up to) a 24 hour rolling average basis. If the owner or operator elects to use an average period from 2 to 24 hours:

I. The feed rate of each metal shall be limited at any time to ten times the feed rate that would be allowed on an hourly rolling average basis;

II. The continuous monitor shall meet the following specifications:

A. A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each 15 seconds, and computes and records the average value at least every 60 seconds.

B. The rolling average for the selected averaging period is defined as the arithmetic mean of one hour block averages for the averaging period. A

one hour block average is the arithmetic mean of the one minute averages recorded during the 60-minute period beginning at one minute after the beginning of the preceding clock hour; and

III. The permit limit for the feed rate of each metal shall be established based on trial burn data as the average over all valid test runs of the highest hourly rolling average feed rate for each run.

(III) Feed Rate Limits for Metals, Total Chloride and Chlorine, and Ash

Feed rate limits for metals, total chlorine and chloride, and ash are established and monitored by knowing the concentration of the substance (i.e., metals, chloride/chlorine, and ash) in each feedstream and the flow rate of the feedstream. To monitor the feed rate of these substances, the flow rate of each feedstream must be monitored under the continuous monitoring requirements of items 5(vi)(I) and(II) of this subparagraph.

(IV) Conduct of Trial Burn Testing

I. If compliance with all applicable emissions standards of subparagraphs (8)(e) through (8)(h) of this Rule is not demonstrated simultaneously during a set of test runs, the operating conditions of additional test runs required to demonstrate compliance with remaining emissions standards must be as close as possible to the original operating conditions.

II. Prior to obtaining test data for purposes of demonstrating compliance with the emissions standards of subparagraphs (8)(e) through (8)(h) or establishing limits on operating parameters under this section, the facility must operate under trial burn conditions for a sufficient period to reach steady-state operations. The Commissioner may determine, however, that industrial furnaces that recycle collected particulate matter back into the furnace and that comply with an alternative implementation approach for metals under part (g)6 of this paragraph need not reach steady state conditions with respect to the flow of metals in the system prior to beginning compliance testing for metals emissions.

III. Trial burn data on the level of an operating parameter for which a limit must be established in the permit must be obtained during emissions sampling for the pollutant(s) (i.e., metals, PM, HCl/Cl_2, organic compounds) for which the parameter must be established as specified by part 5 of this subparagraph.

(vii) General Requirements

(I) Fugitive Emissions

Fugitive emissions must be controlled by:

I. Keeping the combustion zone totally sealed against fugitive emissions; or

II. Maintaining the combustion zone pressure lower than atmospheric pressure; or

III. An alternate means of control demonstrated (with part B of the permit application) to provide fugitive emissions control equivalent to maintenance of combustion zone pressure lower than atmospheric pressure.

(II) Automatic Waste Feed Cutoff

A boiler or industrial furnace must be operated with a functioning system that automatically cuts off the hazardous waste feed when operating conditions deviate from those established under this section. The Commissioner may limit the number of cutoffs per an operating period on a case-by-case basis. In addition:

I. The permit limit for (the indicator of) minimum combustion chamber temperature must be maintained while hazardous waste or hazardous waste residues remain in the combustion chamber;

II. Exhaust gases must be ducted to the air pollution control system operated in accordance with the permit requirements while hazardous waste or hazardous waste residues remain in the combustion chamber; and

III. Operating parameters for which permit limits are established must continue to be monitored during the cutoff, and the hazardous waste feed shall not be restarted until the levels of those parameters comply with the permit limits. For parameters that may be monitored on an instantaneous basis, the Commissioner will establish a minimum period of time after a waste feed cutoff during which the parameter must not exceed the permit limit before the hazardous waste feed may be restarted.

(III) Changes

A boiler or industrial furnace must cease burning hazardous waste when changes in combustion properties, or feed rates of the hazardous waste, other fuels, or industrial furnace feedstocks, or changes in the boiler or industrial furnace design or operating conditions deviate from the limits as specified in the permit.

(viii) Monitoring and Inspections

(I) The owner or operator must monitor and record the following, at a minimum, while burning hazardous waste:

I. If specified by the permit, feed rates and composition of hazardous waste, other fuels, and industrial furnace feedstocks, and feed rates of ash, metals, and total chloride and chlorine;

II. If specified by the permit, carbon monoxide (CO), hydrocarbons (HC), and oxygen on a continuous basis at a common point in the boiler or industrial furnace downstream of the combustion zone and prior to release of stack gases to the atmosphere in accordance with operating requirements specified in item 5(ii)(II) of this subparagraph. CO, HC, and oxygen monitors must be installed, operated, and maintained in accordance with methods specified in Appendix IX of this Rule; and

III. Upon the request of the Commissioner, sampling and analysis of the hazardous waste (and other fuels and industrial furnace feedstocks as appropriate), residues, and exhaust emissions must be conducted to verify that the operating requirements established in the permit achieve the applicable standards of subparagraphs (8)(e), (8)(f), (8)(g), and (8)(h) of this Rule.

(II) All monitors shall record data in units corresponding to the permit limit unless otherwise specified in the permit.

(III) The boiler or industrial furnace and associated equipment (pumps, valves, pipes, fuel storage tanks, etc.) must be subjected to thorough visual inspection when it contains hazardous waste, at least daily for leaks, spills, fugitive emissions, and signs of tampering.

(IV) The automatic hazardous waste feed cutoff system and associated alarms must be tested at least once every 7 days when hazardous waste is burned to verify operability, unless the applicant demonstrates to the Commissioner that weekly inspections will unduly restrict or upset operations and that less frequent inspections will be adequate. At a minimum, operational testing must be conducted at least once every 30 days.

(V) These monitoring and inspection data must be recorded and the records must be placed in the operating record required by Rules 1200-01-11-.06(5)(d).

(ix) Direct Transfer to the Burner

If hazardous waste is directly transferred from a transport vehicle to a boiler or industrial furnace without the use of a storage unit, the owner and operator must comply with subparagraph (l) of this paragraph.

(x) Recordkeeping

The owner or operator must maintain in the operating record of the facility all information and data required by this subparagraph for five (5) years, or as required by a permit issued after the effective date of this Rulemaking, but no less than five (5) years.

(xi) Closure

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 boiler or industrial furnace.

(d) Interim Status Standards for Burners [40 CFR 266.103]

1. Purpose, Scope, Applicability

(i) General

(I) The purpose of this section is to establish minimum national standards for owners and operators of "existing" boilers and industrial furnaces that burn hazardous waste where such standards define the acceptable management of hazardous waste during the period of interim status. The standards of this section apply to owners and operators of existing facilities until either a permit is issued under part (c)4 of this paragraph or until closure responsibilities identified in this section are fulfilled.

(II) "Existing or in existence" means a boiler or industrial furnace that on or before August 21, 1991 is either in operation burning or processing hazardous waste or for which construction (including the ancillary facilities to burn or to process the hazardous waste) has commenced. A facility has commenced construction if the owner or operator has obtained the Federal, State, and local approvals or permits necessary to begin physical construction; and either:

I. A continuous on-site, physical 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 physical construction of the facility to be completed within a reasonable time.

(III) If a boiler or industrial furnace is located at a facility that already has a permit or interim status, then the facility must comply with the applicable regulations dealing with permit modifications in Rule 1200-01-11-.07(9)5 or changes in interim status in Rule 1200-01-11-.07(3)(c).

(ii) Exemptions

The requirements of this section do not apply to hazardous waste and facilities exempt under part (a)2 or subparagraph (i) of this paragraph.

(iii) Prohibition on Burning Dioxin-listed Wastes

The following hazardous waste listed for dioxin and hazardous waste derived from any of these wastes may not be burned in a boiler or industrial furnace operating under interim status: F020, F021, F022, F023, F026, and F027.

(iv) Applicability of Rule 1200-01-11-.05 Standards

Owners and operators of boilers and industrial furnaces that burn hazardous waste and are operating under interim status are subject to the following provisions of Rule 1200-01-11-.05, except as provided otherwise by this subparagraph:

(I) In paragraph (1) (General), Rule 1200-01-11-.05;

(II) In paragraph (2) (General facility standards), Rules 1200-01-11-.05(2)(b)-(h);

(III) In paragraph (3) (Preparedness and prevention), Rules 1200-01-11-.05(3)(b)-(h);

(IV) In paragraph (4) (Contingency plan and emergency procedures), Rules 1200-01-11-.05(4)(b)-(g);

(V) In paragraph (5) (Manifest system, recordkeeping, and reporting), Rules 1200-01-11-.05(5)(b)-(h), except that Rules 1200-01-11-.05(5)(b), (c), and (g) do not apply to owners and operators of on-site facilities that do not receive any hazardous waste from off-site sources;

(VI) In paragraph (7) (Closure and post-closure), Rules 1200-01-11-.05(7)(b)-(f);

(VII) In paragraph (8) (Financial requirements), Rules 1200-01-11-.05(8)(b), (c), (d), (n), and (o), except that States and the Federal government are exempt from the requirements of paragraph (8); and

(VIII) In paragraph (28) (Air emission standards for equipment leaks), except Rule 1200-01-11-.05(28)(a)1.

(v) Special Requirements for Furnaces

The following controls apply during interim status to industrial furnaces (e.g., kilns, cupolas) that feed hazardous waste for a purpose other than solely as an ingredient (see item 2(v)(II) of this subparagraph) at any location other than the hot end where products are normally discharged or where fuels are normally fired:

(I) Controls

I. The hazardous waste shall be fed at a location where combustion gas temperatures are at least 1800 °F;

II. The owner or operator must determine that adequate oxygen is present in combustion gases to combust organic constituents in the waste and retain documentation of such determination in the facility record;

III. For cement kiln systems, the hazardous waste shall be fed into the kiln; and

IV. The hydrocarbon controls of part (e)3 or subpart (d)3(v) of this paragraph apply upon certification of compliance under part 3 of this subparagraph irrespective of the CO level achieved during the compliance test.

(II) Burning Hazardous Waste Solely as an Ingredient

A hazardous waste is burned for a purpose other than solely as an ingredient if it meets either of these criteria:

I. The hazardous waste has a total concentration of nonmetal compounds listed in Appendix VIII of Rule 1200-11-.02(5) exceeding 500 ppm by weight, as-fired, and so is considered to be burned for destruction. The concentration of nonmetal compounds in a waste as-generated may be reduced to the 500 ppm limit by bona fide treatment that removes or destroys nonmetal constituents. Blending for dilution to meet the 500 ppm limit is prohibited and documentation that the waste has not been impermissibly diluted must be retained in the facility record; or

II. The hazardous waste has a heating value of 5,000 Btu/lb or more, as-fired, and so is considered to be burned as fuel. The heating value of a waste as-generated may be reduced to below the 5,000 Btu/lb limit by bona fide treatment that removes or destroys organic constituents. Blending to augment the heating value to meet the 5,000 Btu/lb limit is prohibited and documentation that the waste has not been impermissibly blended must be retained in the facility record.

(vi) Restrictions on Burning Hazardous Waste That Is not a Fuel

Prior to certification of compliance under part 3 of this subparagraph, owners and operators shall not feed hazardous waste that has a heating value less than 5,000 Btu/lb, as-generated, (except that the heating value of a waste as-generated may be increased to above the 5,000 Btu/lb limit by bona fide treatment; however, blending to augment the heating value to meet the 5,000 Btu/lb limit is prohibited and records must be kept to document that impermissible blending has not occurred) in a boiler or industrial furnace, except that:

(I) Hazardous waste may be burned solely as an ingredient; or

(II) Hazardous waste may be burned for purposes of compliance testing (or testing prior to compliance testing) for a total period of time not to exceed 720 hours; or

(III) Such waste may be burned if the Commissioner has documentation to show that, prior to August 21, 1991:

I. The boiler or industrial furnace is operating under the interim status standards for incinerators provided by paragraph (15) of Rule 1200-01-11-.05, or the interim status standards for thermal treatment units provided by paragraph (16) of Rule 1200-01-11-.05; and

II. The boiler or industrial furnace met the interim status eligibility requirements under Rule 1200-01-11-.07(3)(a) for paragraph (15) or (16) of Rule 1200-01-11-.05; and

III. Hazardous waste with a heating value less than 5,000 Btu/lb was burned prior to that date; or

(IV) Such waste may be burned in a halogen acid furnace if the waste was burned as an excluded ingredient under Rule 1200-01-11-.02(1)(b)5 prior to February 21, 1991 and documentation is kept on file supporting this claim.

(vii) Direct Transfer to the Burner

If hazardous waste is directly transferred from a transport vehicle to a boiler or industrial furnace without the use of a storage unit, the owner and operator must comply with subparagraph (I) of this paragraph.

2. Certification of Precompliance

(i) General

The owner or operator must provide complete and accurate information specified in subpart 2(ii) of this subparagraph to the Commissioner on or before August 21, 1991, and must establish limits for the operating parameters specified in subpart 2(iii) of this subparagraph. Such information is termed a "certification of precompliance" and constitutes a certification that the owner or operator has determined that, when the facility is operated within the limits specified in subpart 2(iii) of this subparagraph, the owner or operator believes that, using best engineering judgment, emissions of particulate matter, metals, and HCl and Cl_2 are not likely to exceed the limits provided by subparagraphs (f), (g), and (h). The facility may burn hazardous waste only under the operating conditions that the owner or operator establishes under subpart 2(iii) of this subparagraph until the owner or operator submits a revised certification of precompliance under subpart 2(viii) of this subparagraph or a certification of compliance under part 3 of this subparagraph, or until a permit is issued.

(ii) Information Required

The following information must be submitted with the certification of precompliance to support the determination that the limits established for the operating parameters identified in subpart 2(iii) of this subparagraph are not likely to result in an exceedance of the allowable emission rates for particulate matter, metals, and HCl and Cl_2:

(I) General Facility Information:

I. EPA facility ID number;

II. Facility name, contact person, telephone number, and address;

III. Description of boilers and industrial furnaces burning hazardous waste, including type and capacity of device;

IV. A scaled plot plan showing the entire facility and location of the boilers and industrial furnaces burning hazardous waste; and

V. A description of the air pollution control system on each device burning hazardous waste, including the temperature of the flue gas at the inlet to the particulate matter control system.

(II) Except for facilities complying with the Tier I or Adjusted Tier I feed rate screening limits for metals or total chlorine and chloride provided by parts (g)2 or (g)5 and subpart (h)2(i) or part (h)5 of this paragraph, respectively, the estimated uncontrolled (at the inlet to the air pollution control system) emissions of particulate matter, each metal controlled by subparagraph (g) of this paragraph, and hydrogen chloride and chlorine, and the following information to support such determinations:

I. The feed rate (lb/hr) of ash, chlorine, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium in each feedstream (hazardous waste, other fuels, industrial furnace feedstocks);

II. The estimated partitioning factor to the combustion gas for the materials identified in subitem 2(ii)(II)I of this subparagraph and the basis for the estimate and an estimate of the partitioning to HCl and Cl_2 of total chloride and chlorine in feed materials. To estimate the partitioning factor, the owner or operator must use either best engineering judgment or the procedures specified in Appendix IX of paragraph (30) of this Rule;

III. For industrial furnaces that recycle collected particulate matter (PM) back into the furnace and that will certify compliance with the metals emissions standards under subitem 3(iii)(II)I, the estimated enrichment factor for each metal. To estimate the enrichment factor, the owner or operator must use either best engineering judgment or the procedures specified in "Alternative Methodology for Implementing Metals Controls" in Appendix IX of paragraph (30) of this Rule; and

IV. If best engineering judgment is used to estimate partitioning factors or enrichment factors under subitems 2(ii)(II)II or III of this subparagraph respectively, the basis for the judgment. When best engineering judgment is used to develop or evaluate data or information and make determinations under this subparagraph, the determinations must be made by a qualified, registered

professional engineer and a certification of his/her determinations in accordance with Rule 1200-01-11-.07(2)(a)10 must be provided in the certification of precompliance.

(III) For facilities complying with the Tier I or Adjusted Tier I feed rate screening limits for metals or total chlorine and chloride provided by parts (g)2 or (g)5 and subpart (h)2(i) or part (h)5 of this paragraph, the feed rate (lb/hr) of total chloride and chlorine, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium in each feed stream (hazardous waste, other fuels, industrial furnace feedstocks).

(IV) For facilities complying with the Tier II or Tier III emission limits for metals or HCl and Cl_2 (under parts (g)3 or (g)4 or subpart (h)2(ii) or part (h)3 of this paragraph), the estimated controlled (outlet of the air pollution control system) emissions rates of particulate matter, each metal controlled by subparagraph (g), and HCl and Cl_2, and the following information to support such determinations:

I. The estimated air pollution control system (APCS) removal efficiency for particulate matter, HCl, Cl_2, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium;

II. To estimate APCS removal efficiency, the owner or operator must use either best engineering judgment or the procedures prescribed in Appendix IX of paragraph (30) of this Rule; and

III. If best engineering judgment is used to estimate APCS removal efficiency, the basis for the judgment. Use of best engineering judgment must be in conformance with provisions of subitem 2(ii)(II)IV of this subparagraph.

(V) Determination of allowable emissions rates for HCl, Cl_2, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium, and the following information to support such determinations:

I. For all facilities:

A. Physical stack height;

B. Good engineering practice stack height as defined by 40 CFR 51.100(ii);

C. Maximum flue gas flow rate;

D. Maximum flue gas temperature;

E. Attach a US Geological Service topographic map (or equivalent) showing the facility location and surrounding land within 5 km of the facility;

F. Identify terrain type: complex or noncomplex; and

G. Identify land use: urban or rural.

II. For owners and operators using Tier III site specific dispersion modeling to determine allowable levels under part (g)4 or (h)3 of this subparagraph, or adjusted Tier I feed rate screening limits under part (g)5 or (h)5 of this subparagraph:

A. Dispersion model and version used;

B. Source of meteorological data;

C. The dilution factor in micrograms per cubic meter per gram per second of emissions for the maximum annual average off-site (unless on-site is required) ground level concentration (MEI location); and

D. Indicate the MEI location on the map required under section 2(ii)(V)I E of this subparagraph.

(VI) For facilities complying with the Tier II or III emissions rate controls for metals or HCl and Cl_2, a comparison of the estimated controlled emissions rates determined under item 2(ii)(IV) of this subparagraph with the allowable emission rates determined under item 2(ii)(V) of this subparagraph.

(VII) For facilities complying with the Tier I (or adjusted Tier I) feed rate screening limits for metals or total chloride and chlorine, a comparison of actual feed rates of each metal and total chlorine and chloride determined under item 2(ii)(III) of this subparagraph to the Tier I allowable feed rates.

(VIII) For industrial furnaces that feed hazardous waste for any purpose other than solely as an ingredient (as defined by item 1(v)(II) of this subparagraph) at any location other than the product discharge end of the device, documentation of compliance with the requirements of subitems 1(v)(I)I, II, and III of this subparagraph.

(IX) For industrial furnaces that recycle collected particulate matter (PM) back into the furnace and that will certify compliance with the metals emissions standards under subitem 3(iii)(II)I of this subparagraph:

I. The applicable particulate matter standard in lb/hr; and

II. The precompliance limit on the concentration of each metal in collected PM.

(iii) Limits on Operating Conditions

The owner and operator shall establish limits on the following parameters consistent with the determinations made under subpart 2(ii) of this subparagraph and certify (under provisions of subpart 2(ix) of this subparagraph) to the Commissioner that the facility will operate within the limits during interim status when there is hazardous waste in the unit until revised certification of precompliance under subpart 2(viii) of this subparagraph or certification of compliance under part 3 of this subparagraph:

(I) Feed rate of total hazardous waste and (unless complying with the Tier I or adjusted Tier I metals feed rate screening limits under part (g)2 or 5 of this paragraph) pumpable hazardous waste;

(II) Feed rate of each metal in the following feed streams:

I. Total feed streams, except that industrial furnaces that comply with the alternative metals implementation approach under subpart 2(iv) of this subparagraph must specify limits on the concentration of each metal in collected particulate matter in lieu of feed rate limits for total feedstreams;

II. Total hazardous waste feed, unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under part (g)2 or 5 of this subparagraph; and

III. Total pumpable hazardous waste feed, unless complying with the Tier I or adjusted Tier I metals feed rate screening limits under part (g)2 or 5 of this subparagraph;

(III) Total feed rate of chlorine and chloride in total feed streams;

(IV) Total feed rate of ash in total feed streams, except that the ash feed rate for cement kilns and light-weight aggregate kilns is not limited; and

(V) Maximum production rate of the device in appropriate units when producing normal product, unless complying with the Tier I or Adjusted Tier I feed rate screening limits for chlorine under subpart (h)2(i) or part (h)5 of this paragraph and for all metals under part (g)2 or 5 of this subparagraph, and the uncontrolled particulate emissions do not exceed the standard under subparagraph (f).

(iv) Operating Requirements for Furnaces That Recycle PM

Owners and operators of furnaces that recycle collected particulate matter (PM) back into the furnace and that will certify compliance with the metals emissions controls under subitem 3(iii)(II)I of this subparagraph must comply with the special operating requirements provided in "Alternative Methodology for Implementing Metals Controls" in Appendix IX of paragraph (30) of this Rule.

(v) Measurement of feed rates and production rate

(I) General Requirements

Limits on each of the parameters specified in subpart 2(iii) of this subparagraph (except for limits on metals concentrations in collected particulate matter (PM) for industrial furnaces that recycle collected PM) shall be established and continuously monitored under either of the following methods:

I. Instantaneous Limits

A limit for a parameter may be established and continuously monitored and recorded on an instantaneous basis (i.e., the value that occurs at any time) not to be exceeded at any time; or

II. Hourly Rolling Average Limits

A limit for a parameter may be established and continuously monitored on an hourly rolling average basis defined as follows:

A. A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each 15 seconds, and computes and records the average value at least every 60 seconds.

B. An hourly rolling average is the arithmetic mean of the 60 most recent 1-minute average values recorded by the continuous monitoring system.

(II) Rolling Average Limits for Carcinogenic Metals and Lead

Feed rate limits for the carcinogenic metals (arsenic, beryllium, cadmium, and chromium) and lead may be established either on an hourly rolling average basis as prescribed by subitem 2(v)(I)II of this subparagraph or on (up to) a 24 hour rolling average basis. If the owner or operator elects to use an averaging period from 2 to 24 hours:

I. The feed rate of each metal shall be limited at any time to ten times the feed rate that would be allowed on an hourly rolling average basis;

II. The continuous monitor shall meet the following specifications:

A. A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each 15 seconds, and computes and records the average value at least every 60 seconds.

B. The rolling average for the selected averaging period is defined as the arithmetic mean of one hour block averages for the averaging period. A one hour block average is the arithmetic mean of the one minute averages recorded during the 60-minute period beginning at one minute after the beginning of preceding clock hour.

(III) Feed Rate Limits for Metals, Total Chloride and Chlorine, and Ash

Feed rate limits for metals, total chlorine and chloride, and ash are established and monitored by knowing the concentration of the substance (i.e., metals, chloride/chlorine, and ash) in each feedstream and the flow rate of the feedstream. To monitor the feed rate of these substances, the flow rate of each feedstream must be monitored under the continuous monitoring requirements of items 2(v)(I) and (II) of this subparagraph.

(vi) Public Notice Requirements at Precompliance

On or before August 21, 1991 the owner or operator must submit a notice with the following information for publication in a major local newspaper of general circulation and send a copy of the notice to the appropriate units of State and local government. The owner and operator must provide to the Commissioner with the certification of precompliance evidence of submitting the notice for publication. The notice, which shall be entitled "Notice of Certification of Precompliance with Hazardous Waste Burning Requirements of part (d)2 of this paragraph", must include:

(I) Name and address of the owner and operator of the facility as well as the location of the device burning hazardous waste;

(II) Date that the certification of precompliance is submitted to the Commissioner;

(III) Brief description of the regulatory process required to comply with the interim status requirements of this section including required emissions testing to demonstrate conformance with emissions standards for organic compounds, particulate matter, metals, and HCl and Cl_2;

(IV) Types and quantities of hazardous waste burned including, but not limited to, source, whether solids or liquids, as well as an appropriate description of the waste;

(V) Type of device(s) in which the hazardous waste is burned including a physical description and maximum production rate of each device;

(VI) Types and quantities of other fuels and industrial furnace feedstocks fed to each unit;

(VII) Brief description of the basis for this certification of precompliance as specified in subpart 2(ii) of this subparagraph;

(VIII) Locations where the record for the facility can be viewed and copied by interested parties. These records and locations shall at a minimum include:

I. The administrative record kept by the Division office where the supporting documentation was submitted or another location designated by the Commissioner; and

II. The BIF correspondence file kept at the facility site where the device is located. The correspondence file must include all correspondence between the facility and the Commissioner, state and local regulatory officials, including copies of all certifications and notifications, such as the precompliance certification, precompliance public notice, notice of compliance testing, compliance test report, compliance certification, time extension requests and approvals or denials, enforcement notifications of violations, and copies of EPA and State site visit reports submitted to the owner or operator;

(IX) Notification of the establishment of a facility mailing list whereby interested parties shall notify the Agency that they wish to be placed on the mailing list to receive future information and notices about this facility; and

(X) Location (mailing address) of the applicable EPA Regional Office, Hazardous Waste Division, and/or the Tennessee Department of Environment and Conservation (TDEC), Division of Solid Waste Management, as appropriate where further information can be obtained on the regulation of hazardous waste burning.

(vii) Monitoring Other Operating Parameters

When the monitoring systems for the operating parameters listed in items 3(i)(V)-(VIII) of this subparagraph) of this section are installed and operating in conformance with vendor specifications or (for CO, HC, and oxygen) specifications provided by Appendix IX of paragraph (30) of this Rule, as appropriate, the parameters shall be continuously monitored and records shall be maintained in the operating record.

(viii) Revised Certification of Precompliance

The owner or operator may revise at any time the information and operating conditions documented under subparts 2(ii) and 2(iii) of this subparagraph in the certification of precompliance by submitting a revised certification of precompliance under procedures provided by those subparts.

(I) The public notice requirements of subpart 2(iv) of this subparagraph do not apply to recertifications.

(II) The owner and operator must operate the facility within the limits established for the operating parameters under subpart 2(iii) of this subparagraph until a revised certification is submitted under

this subpart or a certification of compliance is submitted under part 3 of this subparagraph.

(ix) Certification of Precompliance Statement

The owner or operator must include the following signed statement with the certification of precompliance submitted to the Commissioner:

"I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information and supporting documentation. Copies of all emissions tests, dispersion modeling results and other information used to determine conformance with the requirements of Rule 1200-01-11-.09(8)(d)2 are available at the facility and can be obtained from the facility contact person listed above. Based on my inquiry of the person or persons who manages the facility, or those persons directly responsible for gathering the information, the information submitted 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 for knowing violations.

I also acknowledge that the operating limits established in this certification pursuant to Rule 1200-01-11-.09(8)2(iii) and (iv) are enforceable limits at which the facility can legally operate during interim status until: (1) A revised certification of precompliance is submitted, (2) a certification of compliance is submitted, or (3) an operating permit is issued."

3. Certification of Compliance

The owner or operator shall conduct emissions testing to document compliance with the emissions standards of parts (e)2 through 5, subparagraphs (f), (g), and (h), and subitem 1(v)(I)IV. of this subparagraph, under the procedures prescribed by this part, except under extensions of time provided by subpart 3(vii) of this subparagraph. Based on the compliance test, the owner or operator shall submit to the Commissioner on or before August 21, 1992 a complete and accurate "certification of compliance" (under subpart 3(iv) of this subparagraph) with those emission standards establishing limits on the operating parameters specified in subpart 3(i) of this subparagraph.

(i) Limits on Operating Conditions

The owner or operator shall establish limits on the following parameters based on operations during the compliance test (under procedures prescribed in item 3(iv)(IV) of this subparagraph) or as otherwise specified and include these limits with the certification of compliance. The boiler or industrial furnace must be operated in accordance with these operating limits and the applicable emissions standards of parts (e)2 through 5, subparagraphs (f), (g), and (h) of this paragraph, and subitem 1(v)(I)IV. of this subparagraph at all times when there is hazardous waste in the unit:

(I) Feed rate of total hazardous waste and (unless complying with the Tier I or adjusted Tier I metals feed rate screening limits

under part (g)2 or 5 of this subparagraph), pumpable hazardous waste;

(II) Feed rate of each metal in the following feedstreams:

I. Total feedstreams, except that:

A. Facilities that comply with Tier I or Adjusted Tier I metals feed rate screening limits may set their operating limits at the metals feed rate screening limits determined under part (g)2 or 5 of this paragraph; and

B. Industrial furnaces that must comply with the alternative metals implementation approach under item 3(iii)II of this subparagraph must specify limits on the concentration of each metal in the collected particulate matter in lieu of feed rate limits for total feedstreams;

II. Total hazardous waste feed (unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under part (g)2 or 5 of this paragraph); and

III. Total pumpable hazardous waste feed (unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under part (g)2 or 5 of this paragraph);

(III) Total feed rate of chlorine and chloride in total feed streams, except that facilities that comply with Tier I or Adjusted Tier I feed rate screening limits may set their operating limits at the total chlorine and chloride feed rate screening limits determined under subpart (h)2(i) or part (h)5 of this paragraph;

(IV) Total feed rate of ash in total feed streams, except that the ash feed rate for cement kilns and light-weight aggregate kilns is not limited;

(V) Carbon monoxide concentration, and where required, hydrocarbon concentration in stack gas. When complying with the CO controls of part (e)2 of this paragraph, the CO limit is 100 ppmv, and when complying with the HC controls of part (e)3 of this paragraph, the HC limit is 20 ppmv. When complying with the CO controls of part (e)3 of this paragraph, the CO limit is established based on the compliance test;

(VI) Maximum production rate of the device in appropriate units when producing normal product, unless complying with the Tier I or Adjusted Tier I feed rate screening limits for chlorine under subpart (h)2(i) or part (h)5 of this paragraph and for all metals under part (g)2 or (g)5 of this paragraph, and the uncontrolled particulate emissions do not exceed the standard under subparagraph (f) of this paragraph;

(VII) Maximum combustion chamber temperature where the temperature measurement is as close to the combustion zone as possible and is upstream of any quench water injection (unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under part (g)2 or (g)5 of this paragraph);

(VIII) Maximum flue gas temperature entering a particulate matter control device (unless complying with Tier I or Adjusted Tier I metals feed rate screening limits under part (g)2 or (g)5 of this paragraph and the total chlorine and chloride feed rate screening limits under part (h)2 or (h)5 of this paragraph);

(IX) For systems using wet scrubbers, including wet ionizing scrubbers (unless complying with Tier I or Adjusted Tier I metals feed rate screening limits under part (g)2 or (g)5 of this paragraph and the total chlorine and chloride feed rate screening limits under subpart (h)2(i) or part (h)5 of this paragraph):

I. Minimum liquid to flue gas ratio;

II. Minimum scrubber blowdown from the system or maximum suspended solids content of scrubber water; and

III. Minimum pH level of the scrubber water;

(X) For systems using venturi scrubbers, the minimum differential gas pressure across the venturi (unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under part (g)2 or (g)5 of this paragraph and the total chlorine and chloride feed rate screening limits under subpart (h)2(i) or part (h)5 of this paragraph);

(XI) For systems using dry scrubbers (unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under part (g)2 or (g)5 of this paragraph and the total chlorine and chloride feed rate screening limits under subpart (h)2(i) or part (h)5 of this paragraph):

I. Minimum caustic feed rate; and

II. Maximum flue gas flow rate;

(XII) For systems using wet ionizing scrubbers or electrostatic precipitators (unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under part (g)2 or (g)5 of this paragraph and the total chlorine and chloride feed rate screening limits under subpart (h)2(i) or part (h)5 of this paragraph):

I. Minimum electrical power in kilovolt amperes (kVA) to the precipitator plates; and

II. Maximum flue gas flow rate;

(XIII) For systems using fabric filters (baghouses), the minimum pressure drop (unless complying with the Tier I or Adjusted Tier I

metal feed rate screening limits under part (g)2 or (g)5 of this paragraph and the total chlorine and chloride feed rate screening limits under subpart (h)2(i) or part (h)5 of this paragraph).

(ii) Prior Notice of Compliance Testing

At least 30 days prior to the compliance testing required by subpart 3(iii) of this subparagraph, the owner or operator shall notify the Commissioner and submit the following information:

(I) General facility information including:

I. EPA facility ID number;

II. Facility name, contact person, telephone number, and address;

III. Person responsible for conducting compliance test, including company name, address, and telephone number, and a statement of qualifications;

IV. Planned date of the compliance test;

(II) Specific information on each device to be tested including:

I. Description of boiler or industrial furnace;

II. A scaled plot plan showing the entire facility and location of the boiler or industrial furnace;

III. A description of the air pollution control system;

IV. Identification of the continuous emission monitors that are installed, including:

A. Carbon monoxide monitor;

B. Oxygen monitor;

C. Hydrocarbon monitor, specifying the minimum temperature of the system and, if the temperature is less than 150 °C, an explanation of why a heated system is not used (see subpart 3(v) of this subparagraph) and a brief description of the sample gas conditioning system;

V. Indication of whether the stack is shared with another device that will be in operation during the compliance test;

VI. Other information useful to an understanding of the system design or operation.

(III) Information on the testing planned, including a complete copy of the test protocol and Quality Assurance/Quality Control (QA/QC)

plan, and a summary description for each test providing the following information at a minimum:

I. Purpose of the test (e.g., demonstrate compliance with emissions of particulate matter); and

II. Planned operating conditions, including levels for each pertinent parameter specified in subpart 3(i) of this subparagraph.

(iii) Compliance Testing

(I) General

Compliance testing must be conducted under conditions for which the owner or operator has submitted a certification of precompliance under pat 2 of this of this subparagraph and under conditions established in the notification of compliance testing required by subpart 3(ii) of this subparagraph. The owner or operator may seek approval on a case-by-case basis to use compliance test data from one unit in lieu of testing a similar onsite unit. To support the request, the owner or operator must provide a comparison of the hazardous waste burned and other feedstreams, and the design, operation, and maintenance of both the tested unit and the similar unit. The Commissioner shall provide a written approval to use compliance test data in lieu of testing a similar unit if he finds that the hazardous wastes, the devices, and the operating conditions are sufficiently similar, and the data from the other compliance test is adequate to meet the requirements of part 3 of this subparagraph.

(II) Special Requirements for Industrial Furnaces that Recycle Collected PM

Owners and operators of industrial furnaces that recycle back into the furnace particulate matter (PM) from the air pollution control system must comply with one of the following procedures for testing to determine compliance with the metals standards of part (g)3 or (g)4 of this subparagraph:

I. The special testing requirements prescribed in "Alternative Method for Implementing Metals Controls" in Appendix IX of paragraph (30) of this Rule; or

II. Stack emissions testing for a minimum of 6 hours each day while hazardous waste is burned during interim status. The testing must be conducted when burning normal hazardous waste for that day at normal feed rates for that day and when the air pollution control system is operated under normal conditions. During interim status, hazardous waste analysis for metals content must be sufficient for the owner or operator to determine if changes in metals content may affect the ability of the facility to meet the metals emissions standards established under part (g)3 or (g)4 of this subparagraph. Under this option, operating limits (under

subpart 3(i) of this subparagraph) must be established during compliance testing under subpart 3(iii) of this subparagraph only on the following parameters:

A. Feed rate of total hazardous waste;

B. Total feed rate of chlorine and chloride in total feed streams;

C. Total feed rate of ash in total feed streams, except that the ash feed rate for cement kilns and light-weight aggregate kilns is not limited;

D. Carbon monoxide concentration, and where required, hydrocarbon concentration in stack gas;

E. Maximum production rate of the device in appropriate units when producing normal product; or

III. Conduct compliance testing to determine compliance with the metals standards to establish limits on the operating parameters of subpart 3(i) of this subparagraph only after the kiln system has been conditioned to enable it to reach equilibrium with respect to metals fed into the system and metals emissions. During conditioning, hazardous waste and raw materials having the same metals content as will be fed during the compliance test must be fed at the feed rates that will be fed during the compliance test.

(III) Conduct of Compliance Testing

I. If compliance with all applicable emissions standards of subparagraphs (e) through (h) of this paragraph is not demonstrated simultaneously during a set of test runs, the operating conditions of additional test runs required to demonstrate compliance with remaining emissions standards must be as close as possible to the original operating conditions.

II. Prior to obtaining test data for purposes of demonstrating compliance with the applicable emissions standards of subparagraphs (e) through (h) of this paragraph or establishing limits on operating parameters under this subparagraph, the facility must operate under compliance test conditions for a sufficient period to reach steady-state operations. Industrial furnaces that recycle collected particulate matter back into the furnace and that comply with subitems 3(iii)I or II of this subparagraph, however, need not reach steady state conditions with respect to the flow of metals in the system prior to beginning compliance testing for metals.

III. Compliance test data on the level of an operating parameter for which a limit must be established in the certification of compliance must be obtained during emissions sampling for the pollutant(s) (i.e., metals, PM, HCl/Cl_2, organic compounds) for which the parameter must be established as specified by subpart 3(i) of this subparagraph.

(iv) Certification of Compliance

Within 90 days of completing compliance testing, the owner or operator must certify to the Commissioner compliance with the emissions standards of part (e)2, 3, and 5, subparagraphs (f), (g), and (h) of this paragraph, and subitem 1(v)(I)IV of this subparagraph. The certification of compliance must include the following information:

(I) General facility and testing information including:

I. EPA facility ID number;

II. Facility name, contact person, telephone number, and address;

III. Person responsible for conducting compliance testing, including company name, address, and telephone number, and a statement of qualifications;

IV. Date(s) of each compliance test;

V. Description of boiler or industrial furnace tested;

VI. Person responsible for quality assurance/quality control (QA/QC), title, and telephone number, and statement that procedures prescribed in the QA/QC plan submitted under item 3(ii)(III) of this subparagraph have been followed, or a description of any changes and an explanation of why changes were necessary;

VII. Description of any changes in the unit configuration prior to or during testing that would alter any of the information submitted in the prior notice of compliance testing under subpart 3(ii) of this subparagraph, and an explanation of why the changes were necessary;

VIII. Description of any changes in the planned test conditions prior to or during the testing that alter any of the information submitted in the prior notice of compliance testing under subpart 3(ii) of this subparagraph, and an explanation of why the changes were necessary; and

IX. The complete report on results of emissions testing.

(II) Specific information on each test including:

I. Purpose(s) of test (e.g., demonstrate conformance with the emissions limits for particulate matter, metals, HCl, Cl_2, and CO);

II. Summary of test results for each run and for each test including the following information:

A. Date of run;

B. Duration of run;

C. Time-weighted average and highest hourly rolling average CO level for each run and for the test;

D. Highest hourly rolling average HC level, if HC monitoring is required for each run and for the test;

E. If dioxin and furan testing is required under part (e)5 of this paragraph subparagraph, time-weighted average emissions for each run and for the test of chlorinated dioxin and furan emissions, and the predicted maximum annual average ground level concentration of the toxicity equivalency factor;

F. Time-weighted average particulate matter emissions for each run and for the test;

G. Time-weighted average HCl and Cl_2 emissions for each run and for the test;

H. Time-weighted average emissions for the metals subject to regulation under subparagraph (g) of this paragraph for each run and for the test; and

I. QA/QC results.

(III) Comparison of the actual emissions during each test with the emissions limits prescribed by parts (e)2, 3, and 5 and subparagraphs (f), (g), and (h) of this paragraph and established for the facility in the certification of precompliance under part 2 of this subparagraph.

(IV) Determination of operating limits based on all valid runs of the compliance test for each applicable parameter listed in subpart 3(i) of this subparagraph using either of the following procedures:

I. Instantaneous Limits

A parameter may be measured and recorded on an instantaneous basis (i.e., the value that occurs at any time) and the operating limit specified as the time-

weighted average during all runs of the compliance test; or

II. Hourly rolling average basis

A. The limit for a parameter may be established and continuously monitored on an hourly rolling average basis defined as follows:

(A) A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each 15 seconds, and computes and records the average value at least every 60 seconds.

(B) An hourly rolling average is the arithmetic mean of the 60 most recent 1-minute average values recorded by the continuous monitoring system;

B. The operating limit for the parameter shall be established based on compliance test data as the average over all test runs of the highest hourly rolling average value for each run; or

III. Rolling average limits for carcinogenic metals and lead

Feed rate limits for the carcinogenic metals (i.e., arsenic, beryllium, cadmium and chromium) and lead may be established either on an hourly rolling average basis as prescribed by subitem 3(iv)(IV)II of this subparagraph or on (up to) a 24 hour rolling average basis. If the owner or operator elects to use an averaging period from 2 to 24 hours:

A. The feed rate of each metal shall be limited at any time to ten times the feed rate that would be allowed on an hourly rolling average basis;

B. The continuous monitor shall meet the following specifications:

(A) A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each 15 seconds, and computes and records the average value at least every 60 seconds;

(B) The rolling average for the selected averaging period is defined as arithmetic mean of one hour block averages for the averaging period. A one hour block

average is the arithmetic mean of the one minute averages recorded during the 60-minute period beginning at one minute after the beginning of preceding clock hour; and

C. The operating limit for the feed rate of each metal shall be established based on compliance test data as the average over all test runs of the highest hourly rolling average feed rate for each run; or

IV. Feed rate limits for metals, total chloride and chlorine, and ash

Feed rate limits for metals, total chlorine and chloride, and ash are established and monitored by knowing the concentration of the substance (i.e., metals, chloride/chlorine, and ash) in each feedstream and the flow rate of the feedstream. To monitor the feed rate of these substances, the flow rate of each feedstream must be monitored under the continuous monitoring requirements of subitems 3(iv)(IV)I through III of this subparagraph.

(V) Certification of Compliance Statement

The following statement shall accompany the certification of compliance:

"I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information and supporting documentation. Copies of all emissions tests, dispersion modeling results and other information used to determine conformance with the requirements of Rule 1200-01-11-.09(d)3 are available at the facility and can be obtained from the facility contact person listed above. Based on my inquiry of the person or persons who manages the facility, or those persons directly responsible for gathering the information, the information submitted 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 for knowing violations.

I also acknowledge that the operating conditions established in this certification pursuant to Rule 1200-11-.09(d)3(iv)(IV) are enforceable limits at which the facility can legally operate during interim status until a revised certification of compliance is submitted."

(v) Special Requirements for HC Monitoring Systems

When an owner or operator is required to comply with the hydrocarbon (HC) controls provided by part (e)3 of this paragraph or subitem 1(v)(I)IV

of this subparagraph, a conditioned gas monitoring system may be used in conformance with specifications provided in Appendix IX of paragraph (30) of this Rule provided that the owner or operator submits a certification of compliance without using extensions of time provided by subpart 3(vii) of this subparagraph.

(vi) Special Operating Requirements for Industrial Furnaces that Recycle Collected PM

Owners and operators of industrial furnaces that recycle back into the furnace particulate matter (PM) from the air pollution control system must:

(I) When complying with the requirements of subitem 3(iii)(II)I of this subparagraph, comply with the operating requirements prescribed in "Alternative Method to Implement the Metals Controls" in Appendix IX of paragraph (30) of this Rule; and

(II) When complying with the requirements of subitem 3(iii)(II)II of this subparagraph, comply with the operating requirements prescribed by that subitem.

(vii) Extensions of Time

(I) If the owner or operator does not submit a complete certification of compliance for all of the applicable emissions standards of subparagraph (e), (f), (g), and (h) of this paragraph by August 21, 1992, he/she must either:

I. Stop burning hazardous waste and begin closure activities under part 12 of this subparagraph for the hazardous waste portion of the facility; or

II. Limit hazardous waste burning only for purposes of compliance testing (and pretesting to prepare for compliance testing) a total period of 720 hours for the period of time beginning August 21, 1992, submit a notification to the Commissioner by August 21, 1992 stating that the facility is operating under restricted interim status and intends to resume burning hazardous waste, and submit a complete certification of compliance by August 23, 1993; or

III. Obtain a case-by-case extension of time under item 3(vii)(II) of this subparagraph.

(II) The owner or operator may request a case-by-case extension of time to extend any time limit provided by part 3 of this subparagraph if compliance with the time limit is not practicable for reasons beyond the control of the owner or operator.

I. In granting an extension, the Commissioner may apply conditions as the facts warrant to ensure timely compliance with the requirements of this section and that the facility operates in a manner that does not pose a hazard to human health and the environment;

II. When an owner or operator requests an extension of time to enable the facility to comply with the alternative hydrocarbon provisions of part (e)6 of this paragraph and obtain a operating permit because the facility cannot meet the HC limit of part (e)3 of this paragraph:

A. The Commissioner shall, in considering whether to grant the extension:

(A) Determine whether the owner and operator have submitted in a timely manner a complete part B permit application that includes information required under Rule 1200-01-11-.07(2); and

(B) Consider whether the owner and operator have made a good faith effort to certify compliance with all other emission controls, including the controls on dioxins and furans of part (e)5 of this paragraph and the controls on PM, metals, and HCl/Cl_2.

B. If an extension is granted, the Director shall, as a condition of the extension, require the facility to operate under flue gas concentration limits on CO and HC that, based on available information, including information in the part B permit application, are baseline CO and HC levels as defined by subpart (e)6(i) of this paragraph.

(viii) Revised Certification of Compliance

The owner or operator may submit at any time a revised certification of compliance (recertification of compliance) under the following procedures:

(I) Prior to submittal of a revised certification of compliance, hazardous waste may not be burned for more than a total of 720 hours under operating conditions that exceed those established under a current certification of compliance, and such burning may be conducted only for purposes of determining whether the facility can operate under revised conditions and continue to meet the applicable emissions standards of subparagraphs (e), (f), (g), and (h) of this paragraph;

(II) At least 30 days prior to first burning hazardous waste under operating conditions that exceed those established under a current certification of compliance, the owner or operator shall notify the Commissioner and submit the following information:

I. EPA facility ID number, and facility name, contact person, telephone number, and address;

II. Operating conditions that the owner or operator is seeking to revise and description of the changes in facility design or operation that prompted the need to seek to revise the operating conditions;

III. A determination that when operating under the revised operating conditions, the applicable emissions standards of subparagraphs (e), (f), (g), and (h) of this paragraph are not likely to be exceeded. To document this determination, the owner or operator shall submit the applicable information required under subpart 2(ii) of this subparagraph; and

IV. Complete emissions testing protocol for any pretesting and for a new compliance test to determine compliance with the applicable emissions standards of subparagraphs (e), (f), (g), and (h) of this paragraph when operating under revised operating conditions. The protocol shall include a schedule of pre-testing and compliance testing. If the owner and operator revises the scheduled date for the compliance test, he/she shall notify the Commissioner in writing at least 30 days prior to the revised date of the compliance test;

(III) Conduct a compliance test under the revised operating conditions and the protocol submitted to the Commissioner to determine compliance with the applicable emissions standards of subparagraphs (e), (f), (g), and (h) of this paragraph; and

(IV) Submit a revised certification of compliance under subpart 3(iv) of this subparagraph.

4. Periodic Recertifications

The owner or operator must conduct compliance testing and submit to the Commissioner a recertification of compliance under provisions of part 3 of this subparagraph within five (5) years from submitting the previous certification or recertification. If the owner or operator seeks to recertify compliance under new operating conditions, he/she must comply with the requirements of subpart 3(viii) of this subparagraph.

5. Noncompliance with Certification Schedule

If the owner or operator does not comply with the interim status compliance schedule provided by parts 2, 3, and 4 of this subparagraph, hazardous waste burning must terminate on the date that the deadline is missed, closure activities must begin under part 12 of this subparagraph, and hazardous waste burning may not resume except under an operating permit issued under Rule 1200-01-11-.07(1)(j). For purposes of compliance with the closure provisions of part 12 of this subparagraph and Rules 1200-01-11-.05(7)(c)4(ii) and .05(7)(d) the boiler or industrial furnace has received "the known final volume of hazardous waste" on the date that the deadline is missed.

6. Start-up and Shut-down

Hazardous waste (except waste fed solely as an ingredient under the Tier I (or adjusted Tier I) feed rate screening limits for metals and chloride/chlorine) must not be fed into the device during start-up and shut-down of the boiler or industrial furnace, unless the device is operating within the conditions of operation specified in the certification of compliance.

7. Automatic Waste Feed Cutoff

During the compliance test required by subpart 3(iii) of this subparagraph, and upon certification of compliance under part 3 of this subparagraph, a boiler or industrial furnace must be operated with a functioning system that automatically cuts off the hazardous waste feed when the applicable operating conditions specified in items 3(i)(I) and (V) through (XIII) of this subparagraph deviate from those established in the certification of compliance. In addition:

(i) To minimize emissions of organic compounds, the minimum combustion chamber temperature (or the indicator of combustion chamber temperature) that occurred during the compliance test must be maintained while hazardous waste or hazardous waste residues remain in the combustion chamber, with the minimum temperature during the compliance test defined as either:

(I) If compliance with the combustion chamber temperature limit is based on an hourly rolling average, the minimum temperature during the compliance test is considered to be the average over all runs of the lowest hourly rolling average for each run; or

(II) If compliance with the combustion chamber temperature limit is based on an instantaneous temperature measurement, the minimum temperature during the compliance test is considered to be the time-weighted average temperature during all runs of the test; and

(ii) Operating parameters limited by the certification of compliance must continue to be monitored during the cutoff, and the hazardous waste feed shall not be restarted until the levels of those parameters comply with the limits established in the certification of compliance.

8. Fugitive Emissions

Fugitive emissions must be controlled by:

(i) Keeping the combustion zone totally sealed against fugitive emissions; or

(ii) Maintaining the combustion zone pressure lower than atmospheric pressure; or

(iii) An alternate means of control that the owner or operator can demonstrate provide fugitive emissions control equivalent to maintenance of combustion zone pressure lower than atmospheric pressure. Support for such demonstration shall be included in the operating record.

9. Changes

A boiler or industrial furnace must cease burning hazardous waste when changes in combustion properties, or feed rates of the hazardous waste, other fuels, or industrial furnace feedstocks, or changes in the boiler or industrial furnace design or operating conditions deviate from the limits specified in the certification of compliance.

10. Monitoring and Inspections

(i) The owner or operator must monitor and record the following, at a minimum, while burning hazardous waste:

(I) Feed rates and composition of hazardous waste, other fuels, and industrial furnace feed stocks, and feed rates of ash, metals, and total chloride and chlorine as necessary to ensure conformance with the certification of precompliance or certification of compliance;

(II) Carbon monoxide (CO), oxygen, and if applicable, hydrocarbons (HC), on a continuous basis at a common point in the boiler or industrial furnace downstream of the combustion zone and prior to release of stack gases to the atmosphere in accordance with the operating limits specified in the certification of compliance. CO, HC, and oxygen monitors must be installed, operated, and maintained in accordance with methods specified in Appendix IX of this Rule;

(III) Upon the request of the Commissioner, sampling and analysis of the hazardous waste (and other fuels and industrial furnace feed stocks as appropriate) and the stack gas emissions must be conducted to verify that the operating conditions established in the certification of precompliance or certification of compliance achieve the applicable standards of subparagraphs (e), (f), (g), and (h) of this paragraph.

(ii) The boiler or industrial furnace and associated equipment (pumps, valves, pipes, fuel storage tanks, etc.) must be subjected to thorough visual inspection when they contain hazardous waste, at least daily for leaks, spills, fugitive emissions, and signs of tampering.

(iii) The automatic hazardous waste feed cutoff system and associated alarms must be tested at least once every 7 days when hazardous waste is burned to verify operability, unless the owner or operator can demonstrate that weekly inspections will unduly restrict or upset operations and that less frequent inspections will be adequate. Support for such demonstration shall be included in the operating record. At a minimum, operational testing must be conducted at least once every 30 days.

(iv) These monitoring and inspection data must be recorded and the records must be placed in the operating log.

11. Recordkeeping

The owner or operator must keep in the operating record of the facility all information and data required by this subparagraph for five (5) years, or as

required by a permit issued after the effective date of this Rulemaking, but no less than five (5) years.

12. Closure

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 boiler or industrial furnace and must comply with Rules 1200-01-11-.05(7)(b)-(f).

(e) Standards to Control Organic Emissions [40 CFR 266.104]

1. DRE Standard

(i) General

Except as provided in subpart 1(iii) of this subparagraph, a boiler or industrial furnace burning hazardous waste must achieve a destruction and removal efficiency (DRE) of 99.99% for all organic hazardous constituents in the waste feed. To demonstrate conformance with this requirement, 99.99% DRE must be demonstrated during a trial burn for each principal organic hazardous constituent (POHC) designated (under subpart 1(ii) of this subparagraph) in its permit for each waste feed. DRE is determined for each POHC from the following equation:

$$DRE = \left[1 - \frac{w_{out}}{w_{in}} \times 100 \right]$$

where:

w_{in} = Mass feed rate of one principal organic hazardous constituent (POHC) in the hazardous waste fired to the boiler or industrial furnace; and

w_{out} = Mass emission rate of the same POHC present in stack gas prior to release to the atmosphere.

(ii) Designation of POHCs

Principal organic hazardous constituents (POHCs) are those compounds for which compliance with the DRE requirements of this section shall be demonstrated in a trial burn in conformance with procedures prescribed in Rule 1200-01-11-.07(1)(j). One or more POHCs shall be designated by the Commissioner for each waste feed to be burned. POHCs shall be designated based on the degree of difficulty of destruction of the organic constituents in the waste and on their concentrations or mass in the waste feed considering the results of waste analyses submitted with part B of the permit application. POHCs are most likely to be selected from among those compounds listed in Appendix VIII of Rule 1200-01-11-.02 that are also present in the normal waste feed. However, if the applicant demonstrates to the Commissioner's satisfaction that a compound not listed in Appendix VIII or not present in the normal waste feed is a suitable indicator of compliance with the DRE requirements of this

section, that compound may be designated as a POHC. Such POHCs need not be toxic or organic compounds.

(iii) Dioxin-listed Waste

A boiler or industrial furnace burning hazardous waste containing (or derived from) Hazardous Wastes Codes F020, F021, F022, F023, F026, or F027 must achieve a destruction and removal efficiency (DRE) of 99.9999% for each POHC designated (under subpart 1(ii) of this subparagraph) in its permit. This performance must be demonstrated on POHCs that are more difficult to burn than tetra-, penta-, and hexachlorodibenzo-p-dioxins and dibenzofurans. DRE is determined for each POHC from the equation in subpart 1(ii) of this subparagraph. In addition, the owner or operator of the boiler or industrial furnace must notify the Commissioner of intent to burn Hazardous Waste Codes F020, F021, F022, F023, F026, or F027.

(iv) Automatic Waiver of DRE Trial Burn

Owners and operators of boilers operated under the special operating requirements provided by subparagraph (k) of this paragraph are considered to be in compliance with the DRE standard of subpart 1(ii) of this subparagraph and are exempt from the DRE trial burn.

(v) Low Risk Waste

Owners and operators of boilers or industrial furnaces that burn hazardous waste in compliance with the requirements of part (j)1 of this paragraph are considered to be in compliance with the DRE standard of subpart 1(ii) of this subparagraph and are exempt from the DRE trial burn.

2. Carbon Monoxide Standard

(i) Except as provided in part 3 of this subparagraph, the stack gas concentration of carbon monoxide (CO) from a boiler or industrial furnace burning hazardous waste cannot exceed 100 ppmv on an hourly rolling average basis (i.e., over any 60 minute period), continuously corrected to 7 percent oxygen, dry gas basis.

(ii) CO and oxygen shall be continuously monitored in conformance with "Performance Specifications for Continuous Emission Monitoring of Carbon Monoxide and Oxygen for Incinerators, Boilers, and Industrial Furnaces Burning Hazardous Waste" in Appendix IX of paragraph (30) of this Rule.

(iii) Compliance with the 100 ppmv CO limit must be demonstrated during the trial burn (for new facilities or an interim status facility applying for a permit) or the compliance test (for interim status facilities). To demonstrate compliance, the highest hourly rolling average CO level during any valid run of the trial burn or compliance test must not exceed 100 ppmv.

3. Alternative Carbon Monoxide Standard

(i) The stack gas concentration of carbon monoxide (CO) from a boiler or industrial furnace burning hazardous waste may exceed the 100 ppmv limit provided that stack gas concentrations of hydrocarbons (HC) do not exceed 20 ppmv, except as provided by part 6 of this subparagraph for certain industrial furnaces.

(ii) HC limits must be established under this section on an hourly rolling average basis (i.e., over any 60 minute period), reported as propane, and continuously corrected to 7 percent oxygen, dry gas basis.

(iii) HC shall be continuously monitored in conformance with "Performance Specifications for Continuous Emission Monitoring of Hydrocarbons for Incinerators, Boilers, and Industrial Furnaces Burning Hazardous Waste" in Appendix IX of paragraph (30) of this Rule. CO and oxygen shall be continuously monitored in conformance with subpart 2(ii) of this subparagraph.

(iv) The alternative CO standard is established based on CO data during the trial burn (for a new facility) and the compliance test (for an interim status facility). The alternative CO standard is the average over all valid runs of the highest hourly average CO level for each run. The CO limit is implemented on an hourly rolling average basis, and continuously corrected to 7 percent oxygen, dry gas basis.

4. Special Requirements for Furnaces

Owners and operators of industrial furnaces (e.g., kilns, cupolas) that feed hazardous waste for a purpose other than solely as an ingredient (see item (d)1(v)(II) of this paragraph) at any location other than the end where products are normally discharged and where fuels are normally fired must comply with the hydrocarbon limits provided by parts 3 or 6 of this subparagraph irrespective of whether stack gas CO concentrations meet the 100 ppmv limit of part 2 of this subparagraph.

5. Controls for Dioxins and Furans

Owners and operators of boilers and industrial furnaces that are equipped with a dry particulate matter control device that operates within the temperature range of 450-750 °F, and industrial furnaces operating under an alternative hydrocarbon limit established under part 6 of this subparagraph must conduct a site-specific risk assessment as follows to demonstrate that emissions of chlorinated dibenzo-p-dioxins and dibenzofurans do not result in an increased lifetime cancer risk to the hypothetical maximum exposed individual (MEI) exceeding 1 in 100,000:

(i) During the trial burn (for new facilities or an interim status facility applying for a permit) or compliance test (for interim status facilities), determine emission rates of the tetra-octa congeners of chlorinated dibenzo-p-dioxins and dibenzofurans (CDDs/CDFs) using Method 0023A. Sampling Method for Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans Emissions from Stationary Sources, EPA Publication SW-846, as listed in Rule 1200-01-11-.01(2)(b);

(ii) Estimate the 2,3,7,8-TCDD toxicity equivalence of the tetra-octa CDDs/CDFs congeners using "Procedures for Estimating the Toxicity Equivalence of Chlorinated Dibenzo-p-Dioxin and Dibenzofuran

Congeners" in Appendix IX of paragraph (30) of this Rule. Multiply the emission rates of CDD/CDF congeners with a toxicity equivalence greater than zero (see the procedure) by the calculated toxicity equivalence factor to estimate the equivalent emission rate of 2,3,7,8-TCDD;

(iii) Conduct dispersion modeling using methods recommended in appendix W of part 51 of this chapter ("Guideline on Air Quality Models (Revised)" (1986) and its supplements), the "Hazardous Waste Combustion Air Quality Screening Procedure", provided in Appendix IX of paragraph (30) of this Rule, or in Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised (listed in Rule 1200-01-11-.01(2)(b)) to predict the maximum annual average off-site ground level concentration of 2,3,7,8-TCDD equivalents determined under subpart 5(ii) of this subparagraph. The maximum annual average concentration must be used when a person resides on-site; and

(iv) The ratio of the predicted maximum annual average ground level concentration of 2,3,7,8-TCDD equivalents to the risk-specific dose for 2,3,7,8-TCDD provided in Appendix V of this Rule (2.2×10^{-7}) shall not exceed 1.0.

6. Monitoring CO and HC in the By-pass Duct of a Cement Kiln

Cement kilns may comply with the carbon monoxide and hydrocarbon limits provided by parts 2, 3, and 4 of this subparagraph by monitoring in the by-pass duct provided that:

(i) Hazardous waste is fired only into the kiln and not at any location downstream from the kiln exit relative to the direction of gas flow; and

(ii) The by-pass duct diverts a minimum of 10% of kiln off-gas into the duct.

7. Use of Emissions Test Data to Demonstrate Compliance and Establish Operating Limits

Compliance with the requirements of this subparagraph must be demonstrated simultaneously by emissions testing or during separate runs under identical operating conditions. Further, data to demonstrate compliance with the CO and HC limits of this subparagraph or to establish alternative CO or HC limits under this subparagraph must be obtained during the time that DRE testing, and where applicable, CDD/CDF testing under part 5 of this subparagraph and comprehensive organic emissions testing under part 6 of this subparagraph is conducted.

8. Enforcement

For the purposes of permit enforcement, compliance with the operating requirements specified in the permit (under subparagraph (c) of this paragraph) will be regarded as compliance with this subparagraph. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the requirements of this section may be "information" justifying modification or revocation and re-issuance of a permit under Rule 1200-01-11-.07(9).

(f) Standards to Control Particulate Matter [40 CFR 266.105]

1. A boiler or industrial furnace burning hazardous waste may not emit particulate matter in excess of 180 milligrams per dry standard cubic meter (0.08 grains per dry standard cubic foot) after correction to a stack gas concentration of 7% oxygen, using procedures prescribed in 40 CFR part 60, appendix A, methods 1 through 5, and Appendix IX of paragraph (30) of this Rule.

2. An owner or operator meeting the requirements of part (j)2 of this paragraph for the low risk waste exemption is exempt from the particulate matter standard.

3. Oxygen correction

(i) Measured pollutant levels must be corrected for the amount of oxygen in the stack gas according to the formula:

$$Pc = Pm \times 14/(E-Y)$$

Where:

Pc is the corrected concentration of the pollutant in the stack gas;

Pm is the measured concentration of the pollutant in the stack gas;

E is the oxygen concentration on a dry basis in the combustion air fed to the device; and

Y is the measured oxygen concentration on a dry basis in the stack.

(ii) For devices that feed normal combustion air, E will equal 21 percent. For devices that feed oxygen-enriched air for combustion (that is, air with an oxygen concentration exceeding 21 percent), the value of E will be the concentration of oxygen in the enriched air.

(iii) Compliance with all emission standards provided by this paragraph must be based on correcting to 7 percent oxygen using this procedure.

4. For the purposes of permit enforcement, compliance with the operating requirements specified in the permit (under subparagraph (c) of this paragraph) will be regarded as compliance with this subparagraph. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the requirements of this subparagraph may be "information" justifying modification or revocation and re-issuance of a permit under Rule 1200-01-11-.07(9).

(g) Standards to Control Metals Emissions [40 CFR 266.106]

1. General

The owner or operator must comply with the metals standards provided by parts 2, 3, 4, 5, or 6 of this subparagraph for each metal listed in part 2 of this subparagraph that is present in the hazardous waste at detectable levels using appropriate analytical procedures.

2. Tier I Feed Rate Screening Limits

Feed rate screening limits for metals are specified in Appendix I of this Rule as a function of terrain-adjusted effective stack height and terrain and land use in the

vicinity of the facility. Criteria for facilities that are not eligible to comply with the screening limits are provided in subpart 2(vii) of this subparagraph.

(i) Noncarcinogenic Metals

The feed rates of antimony, barium, lead, mercury, thallium, and silver in all feed streams, including hazardous waste, fuels, and industrial furnace feed stocks shall not exceed the screening limits specified in Appendix I of this Rule.

(I) The feed rate screening limits for antimony, barium, mercury, thallium, and silver are based on either:

I. An hourly rolling average as defined in subitem (c)5(vi)(I)II of this paragraph; or

II. An instantaneous limit not to be exceeded at any time.

(II) The feed rate screening limit for lead is based on one of the following:

I. An hourly rolling average as defined in subitem (c)5(vi)(I)II of this paragraph;

II. An averaging period of 2 to 24 hours as defined in item (c)5(vi)(II) of this paragraph with an instantaneous feed rate limit not to exceed 10 times the feed rate that would be allowed on an hourly rolling average basis; or

III. An instantaneous limit not to be exceeded at any time.

(ii) Carcinogenic Metals

(I) The feed rates of arsenic, cadmium, beryllium, and chromium in all feed streams, including hazardous waste, fuels, and industrial furnace feed stocks shall not exceed values derived from the screening limits specified in Appendix I of this Rule. The feed rate of each of these metals is limited to a level such that the sum of the ratios of the actual feed rate to the feed rate screening limit specified in Appendix I shall not exceed 1.0, as provided by the following equation:

$$\sum_{i=1}^{n} \frac{AFR_{(i)}}{FRSL_{(i)}} \leq 1.0$$

where:

n = number of carcinogenic metals

AFR = actual feed rate to the device for metal “i”

FRSL = feed rate screening limit provided by Appendix I of this part for metal “i”.

(II) The feed rate screening limits for the carcinogenic metals are based on either:

I. An hourly rolling average; or

II. An averaging period of 2 to 24 hours as defined in item (c)5(vi)(II) of this paragraph with an instantaneous feed rate limit not to exceed 10 times the feed rate that would be allowed on an hourly rolling average basis.

(iii) TESH

(I) The terrain-adjusted effective stack height is determined according to the following equation:

TESH = Ha+H1-Tr

where:

Ha = Actual physical stack height

H1 = Plume rise as determined from Appendix VI of this Rule as a function of stack flow rate and stack gas exhaust temperature.

Tr = Terrain rise within five kilometers of the stack.

(II) The stack height may not exceed good engineering practice as specified in 40 CFR 51.100(ii).

(III) If the TESH for a particular facility is not listed in the table in the appendices, the nearest lower TESH listed in the table shall be used. If the TESH is four meters or less, a value of four meters shall be used.

(iv) Terrain Type

The screening limits are a function of whether the facility is located in noncomplex or complex terrain. A device located where any part of the surrounding terrain within 5 kilometers of the stack equals or exceeds the elevation of the physical stack height is considered to be in complex terrain and the screening limits for complex terrain apply. Terrain measurements are to be made from U.S. Geological Survey 7.5-minute topographic maps of the area surrounding the facility.

(v) Land Use

The screening limits are a function of whether the facility is located in an area where the land use is urban or rural. To determine whether land use in the vicinity of the facility is urban or rural, procedures provided in Appendix IX or Appendix X of this Rule shall be used.

(vi) Multiple Stacks

Owners and operators of facilities with more than one on-site stack from a boiler, industrial furnace, incinerator, or other thermal treatment unit subject to controls of metals emissions under an operating permit or interim status controls must comply with the screening limits for all such units assuming all hazardous waste is fed into the device with the worst-

case stack based on dispersion characteristics. The worst-case stack is determined from the following equation as applied to each stack:

$K = HVT$

Where:

K = a parameter accounting for relative influence of stack height and plume rise;

H = physical stack height (meters);

V = stack gas flow rate (m^3/second); and

T = exhaust temperature (°K).

The stack with the lowest value of K is the worst-case stack.

(vii) Criteria for Facilities Not Eligible for Screening Limits

If any criteria below are met, the Tier I and Tier II screening limits do not apply. Owners and operators of such facilities must comply with either the Tier III standards provided by part 4 of this subparagraph or with the adjusted Tier I feed rate screening limits provided by part 5 of this subparagraph.

(I) The device is located in a narrow valley less than one kilometer wide;

(II) The device has a stack taller than 20 meters and is located such that the terrain rises to the physical height within one kilometer of the facility;

(III) The device has a stack taller than 20 meters and is located within five kilometers of a shoreline of a large body of water such as an ocean or large lake;

(IV) The physical stack height of any stack is less than 2.5 times the height of any building within five building heights or five projected building widths of the stack and the distance from the stack to the closest boundary is within five building heights or five projected building widths of the associated building; or

(V) The Commissioner determines that standards based on site-specific dispersion modeling are required.

(viii) Implementation

The feed rate of metals in each feedstream must be monitored to ensure that the feed rate screening limits are not exceeded.

3. Tier II Emission Rate Screening Limits

Emission rate screening limits are specified in Appendix I as a function of terrain-adjusted effective stack height and terrain and land use in the vicinity of the facility. Criteria for facilities that are not eligible to comply with the screening limits are provided in subpart 2(vii) of this subparagraph.

(i) Noncarcinogenic Metals

The emission rates of antimony, barium, lead, mercury, thallium, and silver shall not exceed the screening limits specified in Appendix I of this Rule.

(ii) Carcinogenic Metals

The emission rates of arsenic, cadmium, beryllium, and chromium shall not exceed values derived from the screening limits specified in Appendix I of this Rule. The emission rate of each of these metals is limited to a level such that the sum of the ratios of the actual emission rate to the emission rate screening limit specified in Appendix I shall not exceed 1.0, as provided by the following equation:

$$\sum_{i=1}^{n} \frac{AER_{(i)}}{ERSL_{(i)}} \leq 1.0$$

where:

n = number of carcinogenic metals

AER = actual emission rate for metal “i”

ERSL = emission rate screening limit provided by appendix I of this part for metal “i”.

(iii) Implementation

The emission rate limits must be implemented by limiting feed rates of the individual metals to levels during the trial burn (for new facilities or an interim status facility applying for a permit) or the compliance test (for interim status facilities). The feed rate averaging periods are the same as provided by items 2(i)(I) and (II) and 2(ii)(II) of this subparagraph. The feed rate of metals in each feedstream must be monitored to ensure that the feed rate limits for the feedstreams specified under subparagraphs (c) or (d) of this paragraph are not exceeded.

(iv) Definitions and Limitations

The definitions and limitations provided by part 2 of this subparagraph for the following terms also apply to the Tier II emission rate screening limits provided by part 3 of this subparagraph: terrain-adjusted effective stack height, good engineering practice stack height, terrain type, land use, and criteria for facilities not eligible to use the screening limits.

(v) Multiple Stacks

(I) Owners and operators of facilities with more than one onsite stack from a boiler, industrial furnace, incinerator, or other thermal treatment unit subject to controls on metals emissions under a operating permit or interim status controls must comply with the emissions screening limits for any such stacks

assuming all hazardous waste is fed into the device with the worst-case stack based on dispersion characteristics.

(II) The worst-case stack is determined by procedures provided in subpart 2(vi) of this subparagraph.

(III) For each metal, the total emissions of the metal from those stacks shall not exceed the screening limit for the worst-case stack.

4. Tier III and Adjusted Tier I Site-specific Risk Assessment

The requirements of this part apply to facilities complying with either the Tier III or Adjusted Tier I controls, except where specified otherwise.

(i) General

Conformance with the Tier III metals controls must be demonstrated by emissions testing to determine the emission rate for each metal. In addition, conformance with either the Tier III or Adjusted Tier I metals controls must be demonstrated by air dispersion modeling to predict the maximum annual average off-site ground level concentration for each metal, and a demonstration that acceptable ambient levels are not exceeded.

(ii) Acceptable Ambient Levels

Appendices IV and V of this Rule list the acceptable ambient levels for purposes of this rule. Reference air concentrations (RACs) are listed for the noncarcinogenic metals and 10^{-5} risk-specific doses (RSDs) are listed for the carcinogenic metals. The RSD for a metal is the acceptable ambient level for that metal provided that only one of the four carcinogenic metals is emitted. If more than one carcinogenic metal is emitted, the acceptable ambient level for the carcinogenic metals is a fraction of the RSD as described in subpart 4(iii) of this subparagraph.

(iii) Carcinogenic Metals

For the carcinogenic metals, arsenic, cadmium, beryllium, and chromium, the sum of the ratios of the predicted maximum annual average off-site ground level concentrations (except that on-site concentrations must be considered if a person resides on site) to the risk-specific dose (RSD) for all carcinogenic metals emitted shall not exceed 1.0 as determined by the following equation:

$$\sum_{i=l}^{n} \frac{\text{Predicted Ambient Concentration}_{(i)}}{\text{Risk-Specific Dose}_{(i)}} \leq 1.0$$

where: n = number of carcinogenic metals

(iv) Noncarcinogenic Metals

For the noncarcinogenic metals, the predicted maximum annual average off-site ground level concentration for each metal shall not exceed the reference air concentration (RAC).

(v) Multiple Stacks

Owners and operators of facilities with more than one on-site stack from a boiler, industrial furnace, incinerator, or other thermal treatment unit subject to controls on metals emissions under a operating permit or interim status controls must conduct emissions testing (except that facilities complying with Adjusted Tier I controls need not conduct emissions testing) and dispersion modeling to demonstrate that the aggregate emissions from all such on-site stacks do not result in an exceedance of the acceptable ambient levels.

(vi) Implementation

Under Tier III, the metals controls must be implemented by limiting feed rates of the individual metals to levels during the trial burn (for new facilities or an interim status facility applying for a permit) or the compliance test (for interim status facilities). The feed rate averaging periods are the same as provided by items 2(i)(I) and (II) and 2(ii)(II) of this subparagraph. The feed rate of metals in each feedstream must be monitored to ensure that the feed rate limits for the feedstreams specified under subparagraph (c) or (d) of this paragraph are not exceeded.

5. Adjusted Tier I Feed Rate Screening Limits

The owner or operator may adjust the feed rate screening limits provided by appendix I of this part to account for site-specific dispersion modeling. Under this approach, the adjusted feed rate screening limit for a metal is determined by back-calculating from the acceptable ambient level provided by Appendices IV and V of this Rule using dispersion modeling to determine the maximum allowable emission rate. This emission rate becomes the adjusted Tier I feed rate screening limit. The feed rate screening limits for carcinogenic metals are implemented as prescribed in subpart 2(ii) of this subparagraph.

6. Alternative Implementation Approaches

(i) The Commissioner may approve on a case-by-case basis approaches to implement the Tier II or Tier III metals emission limits provided by parts 3 or 4 of this subparagraph alternative to monitoring the feed rate of metals in each feedstream.

(ii) The emission limits provided by part 4 of this subparagraph must be determined as follows:

(I) For each noncarcinogenic metal, by back-calculating from the RAC provided in Appendix IV of this Rule to determine the allowable emission rate for each metal using the dilution factor for the maximum annual average ground level concentration predicted by dispersion modeling in conformance with part 8 of this subparagraph; and

(II) For each carcinogenic metal by:

I. Back-calculating from the RSD provided in Appendix V of this Rule to determine the allowable emission rate for

each metal if that metal were the only carcinogenic metal emitted using the dilution factor for the maximum annual average ground level concentration predicted by dispersion modeling in conformance with part 8 of this subparagraph; and

II. If more than one carcinogenic metal is emitted, selecting an emission limit for each carcinogenic metal not to exceed the emission rate determined by subitem 6(ii)(II)I of this subparagraph such that the sum for all carcinogenic metals of the ratios of the selected emission limit to the emission rate determined by that part does not exceed 1.0.

7. Emission Testing

(i) General

Emission testing for metals shall be conducted using Method 0060, Determinations of Metals in Stack Emissions, EPA Publication SW-846, listed in Rule 1200-01-11-.01(2)(b).

(ii) Hexavalent Chromium

Emissions of chromium are assumed to be hexavalent chromium unless the owner or operator conducts emissions testing to determine hexavalent chromium emissions using procedures prescribed in Method 0061, Determination of Hexavalent Chromium Emissions from Stationary Sources, EPA Publication SW-846, listed in Rule 1200-01-11-.01(2)(b).

8. Dispersion Modeling

Dispersion modeling required under this section shall be conducted according to methods recommended in appendix W of part 51 of this chapter ("Guideline on Air Quality Models (Revised)" (1986) and its supplements), the "Hazardous Waste Combustion Air Quality Screening Procedure", provided in Appendix IX of this Rule, or in Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised (listed in Rule 1200-01-11-.01(2)(b)) to predict the maximum annual average off-site ground level concentration. However, on-site concentrations must be considered when a person resides on-site.

9. Enforcement

For the purposes of permit enforcement, compliance with the operating requirements specified in the permit (under subparagraph (c) of this paragraph) will be regarded as compliance with this subparagraph. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the requirements of this subparagraph may be "information" justifying modification or revocation and re-issuance of a permit under Rule 1200-01-11-.07(9).

(h) Standards to Control Hydrogen Chloride (HCl) and Chlorine Gas (Cl_2) Emissions [40 CFR 266.107]

1. General

The owner or operator must comply with the hydrogen chloride (HCl) and chlorine (Cl_2) controls provided by part 2, 3, or 5 of this subparagraph.

2. Screening Limits

(i) Tier I Feed Rate Screening Limits

Feed rate screening limits are specified for total chlorine in Appendix II of this Rule as a function of terrain-adjusted effective stack height and terrain and land use in the vicinity of the facility. The feed rate of total chlorine and chloride, both organic and inorganic, in all feed streams, including hazardous waste, fuels, and industrial furnace feed stocks shall not exceed the levels specified.

(ii) Tier II Emission Rate Screening Limits

Emission rate screening limits for HCl and Cl_2 are specified in Appendix III of this Rule as a function of terrain-adjusted effective stack height and terrain and land use in the vicinity of the facility. The stack emission rates of HCl and Cl_2 shall not exceed the levels specified.

(iii) Definitions and Limitations

The definitions and limitations provided by part (g)2 of this paragraph for the following terms also apply to the screening limits provided by this subpart: terrain-adjusted effective stack height, good engineering practice stack height, terrain type, land use, and criteria for facilities not eligible to use the screening limits.

(iv) Multiple Stacks

Owners and operators of facilities with more than one on-site stack from a boiler, industrial furnace, incinerator, or other thermal treatment unit subject to controls on HCl or Cl_2 emissions under a operating permit or interim status controls must comply with the Tier I and Tier II screening limits for those stacks assuming all hazardous waste is fed into the device with the worst-case stack based on dispersion characteristics.

(I) The worst-case stack is determined by procedures provided in subpart (g)2(vi) of this paragraph.

(II) Under Tier I, the total feed rate of chlorine and chloride to all subject devices shall not exceed the screening limit for the worst-case stack.

(III) Under Tier II, the total emissions of HCl and Cl_2 from all subject stacks shall not exceed the screening limit for the worst-case stack.

3. Tier III Site-specific Risk Assessments

(i) General

Conformance with the Tier III controls must be demonstrated by emissions testing to determine the emission rate for HCl and Cl_2, air dispersion modeling to predict the maximum annual average off-site

ground level concentration for each compound, and a demonstration that acceptable ambient levels are not exceeded.

(ii) Acceptable Ambient Levels

Appendix IV of this Rule lists the reference air concentrations (RACs) for HCl (7 micrograms per cubic meter) and Cl_2 (0.4 micrograms per cubic meter).

(iii) Multiple Stacks

Owners and operators of facilities with more than one on-site stack from a boiler, industrial furnace, incinerator, or other thermal treatment unit subject to controls on HCl or Cl_2 emissions under a operating permit or interim status controls must conduct emissions testing and dispersion modeling to demonstrate that the aggregate emissions from all such on-site stacks do not result in an exceedance of the acceptable ambient levels for HCl and Cl_2.

4. Averaging Periods

The HCl and Cl_2 controls are implemented by limiting the feed rate of total chlorine and chloride in all feedstreams, including hazardous waste, fuels, and industrial furnace feed stocks. Under Tier I, the feed rate of total chloride and chlorine is limited to the Tier I Screening Limits. Under Tier II and Tier III, the feed rate of total chloride and chlorine is limited to the feed rates during the trial burn (for new facilities or an interim status facility applying for a permit) or the compliance test (for interim status facilities). The feed rate limits are based on either:

(i) An hourly rolling average as defined in subpart (c)5(vi) of this paragraph; or

(ii) An instantaneous basis not to be exceeded at any time.

5. Adjusted Tier I Feed Rate Screening Limits

The owner or operator may adjust the feed rate screening limit provided by Appendix II of this Rule to account for site-specific dispersion modeling. Under this approach, the adjusted feed rate screening limit is determined by back-calculating from the acceptable ambient level for Cl_2 provided by Appendix IV of this Rule using dispersion modeling to determine the maximum allowable emission rate. This emission rate becomes the adjusted Tier I feed rate screening limit.

6. Emissions Testing

Emissions testing for HCl and Cl_2 shall be conducted using the procedures described in Methods 0050 or 0051, EPA Publication SW-846, listed in Rule 1200-01-11-.01(2)(b).

7. Dispersion Modeling

Dispersion modeling shall be conducted according to the provisions of part (g)8 of this paragraph.

8. Enforcement

For the purposes of permit enforcement, compliance with the operating requirements specified in the permit (under subparagraph (c) of this paragraph) will be regarded as compliance with this subparagraph. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the requirements of this subparagraph may be "information" justifying modification or revocation and re-issuance of a permit under Rule 1200-01-11-.07(9).

(i) Small Quantity On-site Burner Exemption [40 CFR 266.108]

1. Exempt Quantities

Owners and operators of facilities that burn hazardous waste in an on-site boiler or industrial furnace are exempt from the requirements of this subpart provided that:

(i) The quantity of hazardous waste burned in a device for a calendar month does not exceed the limits provided in the following table based on the terrain-adjusted effective stack height as defined in subpart (g)2(iii) of this paragraph:

Exempt Quantities for Small Quantity Burner Exemption

Terrain-adjusted Effective Stack Height of Device (meters)	Allowable Hazardous Waste Burning Rate (gallons/month)	Terrain-adjusted Effective Stack Height of Device (meters)	Allowable Hazardous Waste Burning Rate (Gallons/month)
0 to 3.9	0	40.0 to 44.9	210
4.0 to 5.9	13	45.0 to 49.9	260
6.0 to 7.9	18	50.0 to 54.9	330
8.0 to 9.9	27	55.0 to 59.9	400
10.0 to 11.9	40	60.0 to 64.9	490
12.0 to 13.9	48	65.0 to 69.9	610
14.0 to 15.9	59	70.0 to 74.9	680
16.0 to 17.9	69	75.0 to 79.9	760
18.0 to 19.9	76	80.0 to 84.9	850
20.0 to 21.9	84	85.0 to 89.9	960
22.0 to 23.9	93	90.0 to 94.9	1,100
24.0 to 25.9	100	95.0 to 99.9	1,200
26.0 to 27.9	110	100.0 to 104.9	1,300
28.0 to 29.9	130	105.0 to 109.9	1,500
30.0 to 34.9	140	110.0 to 114.9	1,700
35.0 to 39.9	170	115.0 or greater	1,900

(ii) The maximum hazardous waste firing rate does not exceed at any time 1 percent of the total fuel requirements for the device (hazardous waste plus other fuel) on a total heat input or mass input basis, whichever results in the lower mass feed rate of hazardous waste.

(iii) The hazardous waste has a minimum heating value of 5,000 Btu/lb, as generated; and

(iv) The hazardous waste fuel does not contain (and is not derived from) Hazardous Waste Codes F020, F021, F022, F023, F026, or F027.

2. Mixing With Nonhazardous Fuels

If hazardous waste fuel is mixed with a nonhazardous fuel, the quantity of hazardous waste before such mixing is used to comply with part 1 of this subparagraph.

3. Multiple Stacks

If an owner or operator burns hazardous waste in more than one on-site boiler or industrial furnace exempt under this subparagraph, the quantity limits provided by subpart 1(i) of this subparagraph are implemented according to the following equation:

$$\sum_{i=1}^{n} \frac{\text{Actual Quantity Burned}_{(i)}}{\text{Allowable Quantity Burned}_{(i)}} \leq 1.0$$

where:

n means the number of stacks;

Actual Quantity Burned means the waste quantity burned per month in device “i”;

Allowed Quantity Burned means the maximum allowable exempt quantity for stack “i” from the table in subpart 1(i) of this subparagraph above.

(Note: Hazardous wastes that are subject to the special requirements for small quantity generators under Rule 1200-01-11-.02(1)(e) may be burned in an off-site device under the exemption provided by subparagraph (i) of this paragraph, but must be included in the quantity determination for the exemption.)

4. Notification Requirements

The owner or operator of facilities qualifying for the small quantity burner exemption under this subparagraph must provide a one-time signed, written notice to the Department indicating the following:

(i) The combustion unit is operating as a small quantity burner of hazardous waste;

(ii) The owner and operator are in compliance with the requirements of this subparagraph; and

(iii) The maximum quantity of hazardous waste that the facility may burn per month as provided by subpart 1(i) of this subparagraph.

5. Recordkeeping Requirements

The owner or operator must maintain at the facility for at least three years sufficient records documenting compliance with the hazardous waste quantity, firing rate, and heating value limits of this subparagraph. At a minimum, these records must indicate the quantity of hazardous waste and other fuel burned in each unit per calendar month, and the heating value of the hazardous waste.

(j) Low Risk Waste Exemption [40 CFR 266.109]

1. Waiver of DRE Standard

The DRE standard of part (e)1 of this paragraph does not apply if the boiler or industrial furnace is operated in conformance with subpart 1(i) of this subparagraph and the owner or operator demonstrates by procedures prescribed in subpart 1(ii) of this subparagraph that the burning will not result in unacceptable adverse health effects.

(i) The device shall be operated as follows:

(I) A minimum of 50 percent of fuel fired to the device shall be fossil fuel, fuels derived from fossil fuel, tall oil, or, if approved by the Commissioner on a case-by-case basis, other nonhazardous fuel with combustion characteristics comparable to fossil fuel. Such fuels are termed "primary fuel" for purposes of this subparagraph. (Tall oil is a fuel derived from vegetable and rosin fatty acids.) The 50 percent primary fuel firing rate shall be determined on a total heat or mass input basis, whichever results in the greater mass feed rate of primary fuel fired;

(II) Primary fuels and hazardous waste fuels shall have a minimum as-fired heating value of 8,000 Btu/lb;

(III) The hazardous waste is fired directly into the primary fuel flame zone of the combustion chamber; and

(IV) The device operates in conformance with the carbon monoxide controls provided by subpart (e)2(i) of this paragraph. Devices subject to the exemption provided by this subparagraph are not eligible for the alternative carbon monoxide controls provided by part (e)3 of this paragraph.

(ii) Procedures to demonstrate that the hazardous waste burning will not pose unacceptable adverse public health effects are as follows:

(I) Identify and quantify those nonmetal compounds listed in Appendix VIII of Rule 1200-01-11-.02(5) that could reasonably be expected to be present in the hazardous waste. The constituents excluded from analysis must be identified and the basis for their exclusion explained;

(II) Calculate reasonable, worst case emission rates for each constitutent identified in item 1(ii)(I) of this subparagraph by assuming the device achieves 99.9 percent destruction and removal efficiency. That is, assume that 0.1 percent of the mass weight of each constituent fed to the device is emitted;

(III) For each constituent identified in item 1(ii)(I) of this subparagraph, use emissions dispersion modeling to predict the maximum annual average ground level concentration of the constituent.

I. Dispersion modeling shall be conducted using methods specified in part (g)8 of this paragraph.

II. Owners and operators of facilities with more than one on-site stack from a boiler or industrial furnace that is exempt under this subparagraph must conduct dispersion modeling of emissions from all stacks exempt under this subparagraph to predict ambient levels prescribed by this item;

(IV) Ground level concentrations of constituents predicted under item 1(ii)(III) of this subparagraph must not exceed the following levels:

I. For the noncarcinogenic compounds listed in Appendix IV of this Rule, the levels established in Appendix IV;

II. For the carcinogenic compounds listed in Appendix V of this Rule, the sum for all constituents of the ratios of the actual ground level concentration to the level established in Appendix V cannot exceed 1.0; and

III. For constituents not listed in Appendix IV or V, 0.1 micrograms per cubic meter.

2. Waiver of Particulate Matter Standard

The particulate matter standard of subparagraph (f) of this paragraph does not apply if:

(i) The DRE standard is waived under part 1 of this subparagraph; and

(ii) The owner or operator complies with the Tier I or adjusted Tier I metals feed rate screening limits provided by part (g)2 or (g)5 of this paragraph.

(k) Waiver of DRE Trial Burn for Boilers [40 CFR 266.110]

Boilers that operate under the special requirements of this subparagraph, and that do not burn hazardous waste containing (or derived from) Hazardous Waste Codes F020, F021, F022, F023, F026, or F027, are considered to be in conformance with the DRE standard of part (e)1 of this paragraph, and a trial burn to demonstrate DRE is waived. When burning hazardous waste:

1. A minimum of 50 percent of fuel fired to the device shall be fossil fuel, fuels derived from fossil fuel, tall oil, or, if approved by the Commissioner on a case-by-case basis, other nonhazardous fuel with combustion characteristics comparable to fossil fuel. Such fuels are termed "primary fuel" for purposes of this section. (Tall oil is a fuel derived from vegetable and rosin fatty acids.) The 50 percent primary fuel firing rate shall be determined on a total heat or mass input basis, whichever results in the greater mass feed rate of primary fuel fired;

2. Boiler load shall not be less than 40 percent. Boiler load is the ratio at any time of the total heat input to the maximum design heat input;

3. Primary fuels and hazardous waste fuels shall have a minimum as-fired heating value of 8,000 Btu/lb, and each material fired in a burner where hazardous waste is fired must have a heating value of at least 8,000 Btu/lb, as-fired;

4. The device shall operate in conformance with the carbon monoxide standard provided by subpart (e)2(i) of this paragraph. Boilers subject to the waiver of the DRE trial burn provided by this subparagraph are not eligible for the alternative carbon monoxide standard provided by part (e)3 of this paragraph;

5. The boiler must be a watertube type boiler that does not feed fuel using a stoker or stoker type mechanism; and

6. The hazardous waste shall be fired directly into the primary fuel flame zone of the combustion chamber with an air or steam atomization firing system, mechanical atomization system, or a rotary cup atomization system under the following conditions:

(i) Viscosity

The viscosity of the hazardous waste fuel as-fired shall not exceed 300 SSU;

(ii) Particle Size

When a high pressure air or steam atomizer, low pressure atomizer, or mechanical atomizer is used, 70% of the hazardous waste fuel must pass through a 200 mesh (74 micron) screen, and when a rotary cup atomizer is used, 70% of the hazardous waste must pass through a 100 mesh (150 micron) screen;

(iii) Mechanical Atomization Systems

Fuel pressure within a mechanical atomization system and fuel flow rate shall be maintained within the design range taking into account the viscosity and volatility of the fuel;

(iv) Rotary Cup Atomization Systems

Fuel flow rate through a rotary cup atomization system must be maintained within the design range taking into account the viscosity and volatility of the fuel.

(l) Standards for Direct Transfer [40 CFR 266.111]

1. Applicability

The regulations in this subparagraph apply to owners and operators of boilers and industrial furnaces subject to subparagraphs (c) or (d) of this paragraph if hazardous waste is directly transferred from a transport vehicle to a boiler or industrial furnace without the use of a storage unit.

2. Definitions

(i) When used in this subparagraph, the following terms have the meanings given below:

"Direct transfer 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 between a container (i.e., transport vehicle) and a boiler or industrial furnace.

"Container" means any portable device in which hazardous waste is transported, stored, treated, or otherwise handled, and includes transport vehicles that are containers themselves (e.g., tank trucks, tanker-trailers, and rail tank cars), and containers placed on or in a transport vehicle.

(ii) This subparagraph references several requirements provided in paragraph (9) and (10) of Rules 1200-01-11-.05 and .06. For purposes of this subparagraph, the term "tank systems" in those referenced requirements means direct transfer equipment as defined in subpart 2(i) of this subparagraph.

3. General Operating Requirements

(i) No direct transfer of a pumpable hazardous waste shall be conducted from an open-top container to a boiler or industrial furnace.

(ii) Direct transfer equipment used for pumpable hazardous waste shall always be closed, except when necessary to add or remove the waste, and shall not be opened, handled, or stored in a manner that may cause any rupture or leak.

(iii) The direct transfer of hazardous waste to a boiler or industrial furnace shall be conducted so that it does not:

(I) Generate extreme heat or pressure, fire, 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 container or direct transfer equipment containing the waste;

(V) Adversely affect the capability of the boiler or industrial furnace to meet the standards provided by subparagraph (e) through (h) of this paragraph; or

(VI) Threaten human health or the environment.

(iv) Hazardous waste shall not be placed in direct transfer equipment, if it could cause the equipment or its secondary containment system to rupture, leak, corrode, or otherwise fail.

(v) The owner or operator of the facility shall use appropriate controls and practices to prevent spills and overflows from the direct transfer

equipment or its secondary containment systems. These include at a minimum:

(I) Spill prevention controls (e.g., check valves, dry discount couplings); and

(II) Automatic waste feed cutoff to use if a leak or spill occurs from the direct transfer equipment.

4. Areas Where Direct Transfer Vehicles (containers) are Located

Applying the definition of container under this subparagraph, owners and operators must comply with the following requirements:

(i) The containment requirements of Rule 1200-01-11-.06(9)(f);

(ii) The use and management requirements of Rule 1200-01-11-.05(9), except for Rule 1200-01-11-.05(9)(a) and (9)(e), and except that in lieu of the special requirements of Rule 1200-01-11-.05(9)(g) for ignitable or reactive waste, the owner or operator may comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjacent property line that can be built upon as required in Tables 2-1 through 2-6 of the National Fire Protection Association's (NFPA) "Flammable and Combustible Liquids Code," (1977 or 1981) (listed in Rule 1200-01-11-.01(2)(b)). The owner or operator must obtain and keep on file at the facility a written certification by the local Fire Marshall that the installation meets the subject NFPA codes; and

(iii) The closure requirements of Rule 1200-01-11-.06(9)(i).

5. Direct Transfer Equipment

Direct transfer equipment must meet the following requirements:

(i) Secondary Containment

Owners and operators shall comply with the secondary containment requirements of Rule 1200-01-11-.05(10)(d), except for parts 4, 5, and 9 of that Rule as follows:

(I) For all new direct transfer equipment, prior to their being put into service; and

(II) For existing direct transfer equipment within 2 years after August 21, 1991.

(ii) Requirements Prior to Meeting Secondary Containment Requirements

(I) For existing direct transfer equipment that does not have secondary containment, the owner or operator shall determine whether the equipment is leaking or is unfit for use. The owner or operator shall obtain and keep on file at the facility a written assessment reviewed and certified by a qualified, registered professional engineer in accordance with Rule 1200-01-11-

.07(2)(a)10 that attests to the equipment's integrity by August 21, 1992.

(II) This assessment shall determine whether the direct transfer equipment is adequately designed and has sufficient structural strength and compatibility with the waste(s) to be transferred to ensure that it will not collapse, rupture, or fail. At a minimum, this assessment shall consider the following:

I. Design standard(s), if available, according to which the direct transfer equipment was 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 equipment, if available, (otherwise, an estimate of the age); and

V. Results of a leak test or other integrity examination such that the effects of temperature variations, vapor pockets, cracks, leaks, corrosion, and erosion are accounted for.

(III) If, as a result of the assessment specified above, the direct transfer equipment is found to be leaking or unfit for use, the owner or operator shall comply with the requirements of Rules 1200-01-11-.05(10)(g)1 and 2.

(iii) Inspections and Recordkeeping

(I) The owner or operator must inspect at least once each operating hour when hazardous waste is being transferred from the transport vehicle (container) to the boiler or industrial furnace:

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. The above ground portions of the direct transfer equipment to detect corrosion, erosion, or releases of waste (e.g., wet spots, dead vegetation); and

III. Data gathered from monitoring equipment and leak-detection equipment, (e.g., pressure and temperature gauges) to ensure that the direct transfer equipment is being operated according to its design.

(II) The owner or operator must inspect cathodic protection systems, if used, to ensure that they are functioning properly according to the schedule provided by Rule 1200-01-11-.05(10)(f)2.

(III) Records of inspections made under this subpart shall be maintained in the operating record at the facility, and available for inspection for at least 3 years from the date of the inspection.

(iv) Design and Installation of New Ancillary Equipment

Owners and operators must comply with the requirements of Rule 1200-01-11-.05(10)(c).

(v) Response to Leaks or Spills

Owners and operators must comply with the requirements of Rule 1200-01-11-.05(10)(g).

(vi) Closure

Owners and operators must comply with the requirements of Rule 1200-01-11-.05(10)(h), except for subparts 3(ii) through 3(iv) of that Rule.

(m) Regulation of Residues [40 CFR 266.112]

A residue derived from the burning or processing of hazardous waste in a boiler or industrial furnace is not excluded from the definition of a hazardous waste under subparts 2(xiii), (xv), or (xvi) of Rule 1200-01-11-.02(1)(d) unless the device and the owner or operator meet the following requirements:

1. The device meets the following criteria:

(i) Boilers

Boilers must burn at least 50% coal on a total heat input or mass input basis, whichever results in the greater mass feed rate of coal;

(ii) Ore or Mineral Furnaces

Industrial furnaces subject to Rule 1200-01-11-.02(1)(d)2(xv) must process at least 50% by weight normal, nonhazardous raw materials;

(iii) Cement Kilns

Cement kilns must process at least 50% by weight normal cement-production raw materials;

2. The owner or operator demonstrates that the hazardous waste does not significantly affect the residue by demonstrating conformance with either of the following criteria:

(i) Comparison of Waste-derived Residue With Normal Residue

The waste-derived residue must not contain Appendix VIII, Rule 1200-01-11-.02(5) constituents (toxic constituents) that could reasonably be attributable to the hazardous waste at concentrations significantly higher than in residue generated without burning or processing of hazardous waste, using the following procedure. Toxic compounds that could reasonably be attributable to burning or processing the hazardous waste (constituents of concern) include toxic constituents in the hazardous waste, and the organic compounds listed in Appendix VIII of this Rule that may be generated as products of incomplete combustion. For polychlorinated dibenzo-p-dioxins and polychlorinated dibenzo-furans, analyses must be performed to determine specific congeners and

homologues, and the results converted to 2, 3, 7, 8-TCDD equivalent values using the procedure specified in section 4.0 of appendix IX of this Rule.

(I) Normal Residue

Concentrations of toxic constituents of concern in normal residue shall be determined based on analyses of a minimum of 10 samples representing a minimum of 10 days of operation. Composite samples may be used to develop a sample for analysis provided that the compositing period does not exceed 24 hours. The upper tolerance limit (at 95% confidence with a 95% proportion of the sample distribution) of the concentration in the normal residue shall be considered the statistically-derived concentration in the normal residue. If changes in raw materials or fuels reduce the statistically-derived concentrations of the toxic constituents of concern in the normal residue, the statistically-derived concentrations must be revised or statistically-derived concentrations of toxic constituents in normal residue must be established for a new mode of operation with the new raw material or fuel. To determine the upper tolerance limit in the normal residue, the owner or operator shall use statistical procedures prescribed in "Statistical Methodology for Bevill Residue Determinations" in Appendix IX of this Rule.

(II) Waste-derived Residue

Waste-derived residue shall be sampled and analyzed as often as necessary to determine whether the residue generated during each 24-hour period has concentrations of toxic constituents that are higher than the concentrations established for the normal residue under item 2(i)(I) of this subparagraph. If so, hazardous waste burning has significantly affected the residue and the residue shall not be excluded from the definition of a hazardous waste. Concentrations of toxic constituents of concern in the waste-derived residue shall be determined based on analysis of one or more samples obtained over a 24-hour period. Multiple samples may be analyzed, and multiple samples may be taken to form a composite sample for analysis provided that the sampling period does not exceed 24 hours. If more than one sample is analyzed to characterize waste-derived residues generated over a 24-hour period, the concentration of each toxic constituent shall be the arithmetic mean of the concentrations in the samples. No results may be disregarded; or

(ii) Comparison of Waste-derived Residue Concentrations With Health-based Limits

(I) Nonmetal Constituents

The concentration of each nonmetal toxic constituent of concern (specified in subpart 2(i) of this subparagraph) in the waste-derived residue must not exceed the health-based level specified in Appendix VII of this Rule, or the level of detection, whichever is higher. If a health-based limit for a constituent of concern is not listed in Appendix VII of this Rule, then a limit of 0.002 micrograms per kilogram or the level of detection (which must be

determined by using appropriate analytic procedures), whichever is higher, must be used. The levels specified in Appendix VII of this Rule (and the default level of 0.002 micrograms per kilogram or the level of detection for constituents as identified in Note 1 of Appendix VII of this Rule) are administratively stayed under the condition, for those constituents specified in subpart 2(i) of this subparagraph, that the owner or operator complies with alternative levels defined as the land disposal restriction limits specified in Rule 1200-01-11-.10(3)(d) for F039 nonwastewaters. In complying with those alternative levels, if an owner or operator is unable to detect a constituent despite documenting use of best good-faith efforts as defined by applicable Department guidance or standards, the owner or operator is deemed to be in compliance for that constituent. Until new guidance or standards are developed, the owner or operator may demonstrate such good-faith efforts by achieving a detection limit for the constituent that does not exceed an order of magnitude above the level provided by Rule 1200-01-11-.10(3)(d) for F039 nonwastewaters. In complying with the Rule 1200-01-11-.10(3)(d) F039 nonwastewater levels for polychlorinated dibenzo-p-dioxins and polychlorinated dibenzo-furans, analyses must be performed for total hexachlorodibenzo-p-dioxins, total hexachlorodibenzofurans, total pentachlorobibenzo-p-dioxins, total pentachlorodibenzofurans, total tetrachlorodibenzo-p-dioxins, and total tetrachlorodibenzofurans.

Note to this paragraph: The administrative stay, under the condition that the owner or operator complies with alternative levels defined as the land disposal restriction limits specified in § 268.43 of this chapter for F039 nonwastewaters, remains in effect until further administrative action is taken and notice is published in the Federal Register and the Code of Federal Regulations.

(II) Metal Constituents

The concentration of metals in an extract obtained using the Toxicity Characteristic Leaching Procedure of Rule 1200-01-11-.02(3)(e) must not exceed the levels specified in Appendix VII of this Rule; and

(III) Sampling and Analysis

Waste-derived residue shall be sampled and analyzed as often as necessary to determine whether the residue generated during each 24-hour period has concentrations of toxic constituents that are higher than the health-based levels. Concentrations of toxic constituents of concern in the waste-derived residue shall be determined based on analysis of one or more samples obtained over a 24-hour period. Multiple samples may be analyzed, and multiple samples may be taken to form a composite sample for analysis provided that the sampling period does not exceed 24 hours. If more than one sample is analyzed to characterize waste-derived residues generated over a 24-hour period, the concentration of each toxic constituent shall be the arithmetic mean of the concentrations in the samples. No results may be disregarded; and

3. Records sufficient to document compliance with the provisions of this subparagraph shall be retained until closure of the boiler or industrial furnace unit. At a minimum, the following shall be recorded.

(i) Levels of constituents in Appendix VIII of Rule 1200-01-11-.02(5), that are present in waste-derived residues;

(ii) If the waste-derived residue is compared with normal residue under subpart 2(i) of this subparagraph:

(I) The levels of constituents in Appendix VIII of Rule 1200-01-11-.02(5), that are present in normal residues; and

(II) Data and information, including analyses of samples as necessary, obtained to determine if changes in raw materials or fuels would reduce the concentration of toxic constituents of concern in the normal residue.

(9) - (12) (RESERVED) [40 CFR 266 Subparts I-L]

(13) Military Munitions [40 CFR 266 Subpart M]

(a) Applicability [40 CFR 266.200]

1. The regulations in this paragraph identify when military munitions become a solid waste, and, if these wastes are also hazardous under this paragraph or Rule 1200-01-11-.02, the management standards that apply to these wastes.

2. Unless otherwise specified in this paragraph, all applicable requirements in Rule 1200-01-11-.01 through .10 apply to waste military munitions.

(b) Definitions [40 CFR 266.201]

In addition to the definitions in Rule 1200-01-11-.01(2)(a), the following definitions apply to this paragraph:

“Active range” means a military range that is currently in service and is being regularly used for range activities.

“Chemical agents and munitions” are defined as in 50 U.S.C. section 1521(j)(1).

“Explosives or munitions emergency response specialist” is as defined in Rule 1200-01-11-.01(2)(a).

“Explosives or munitions emergency” is as defined in Rule 1200-01-11-.01(2)(a).

“Explosives or munitions emergency response” is as defined in Rule 1200-01-11-.01(2)(a).

“Inactive range” means a military range that is not currently being used, but that is still under military control and considered by the military to be a potential range area, and that has not been put to a new use that is incompatible with range activities.

“Military” means the Department of Defense (DOD), the Armed Services, Coast Guard, National Guard, Department of Energy (DOE), or other parties under contract or acting as an agent for the foregoing, who handle military munitions.

“Military munitions” is as defined in Rule 1200-01-11-.01(2)(a).

“Military range” means designated land and water areas set aside, managed, and used to conduct research on, develop, test, and evaluate military munitions and explosives, other ordnance, or weapon systems, or to train military personnel in their use and handling. Ranges include firing lines and positions, maneuver areas, firing lanes, test pads, detonation pads, impact areas, and buffer zones with restricted access and exclusionary areas.

“Unexploded ordnance (UXO)” means military munitions that have been primed, fused, armed, or otherwise prepared for action, and have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installation, personnel, or material and remain unexploded either by malfunction, design, or any other cause.

(c) Definition of Solid Waste [40 CFR 266.202]

1. A military munition is not a solid waste when:

(i) Used for its intended purpose, including:

(I) Use in training military personnel or explosives and munitions emergency response specialists (including training in proper destruction of unused propellant or other munitions); or

(II) Use in research, development, testing, and evaluation of military munitions, weapons, or weapon systems; or

(III) Recovery, collection, and on-range destruction of unexploded ordnance and munitions fragments during range clearance activities at active or inactive ranges. However, ``use for intended purpose'' does not include the on-range disposal or burial of unexploded ordnance and contaminants when the burial is not a result of product use.

(ii) An unused munition, or component thereof, is being repaired, reused, recycled, reclaimed, disassembled, reconfigured, or otherwise subjected to materials recovery activities, unless such activities involve use constituting disposal as defined in Rule 1200-01-11-.02(1)(b)3(i), or burning for energy recovery as defined in Rule 1200-01-11-.02(1)(b)3(ii).

2. An unused military munition is a solid waste when any of the following occurs:

(i) The munition is abandoned by being disposed of, burned, detonated (except during intended use as specified in part 1 of this subparagraph), incinerated, or treated prior to disposal; or

(ii) The munition is removed from storage in a military magazine or other storage area for the purpose of being disposed of, burned, or incinerated, or treated prior to disposal; or

(iii) The munition is deteriorated or damaged (e.g., the integrity of the munition is compromised by cracks, leaks, or other damage) to the point that it cannot be put into serviceable condition, and cannot reasonably be recycled or used for other purposes; or

(iv) The munition has been declared a solid waste by an authorized military official.

3. A used or fired military munition is a solid waste:

(i) When transported off range or from the site of use, where the site of use is not a range, for the purposes of storage, reclamation, treatment, disposal, or treatment prior to disposal; or

(ii) If recovered, collected, and then disposed of by burial, or landfilling either on or off a range.

4. For purposes of Tennessee Code Annotated (T.C.A.) §68-212-104(17), a used or fired military munition is a solid waste, and, therefore, is potentially subject to corrective action authorities under T.C.A. §§68-212-108(l), and 68-212-111, or imminent and substantial endangerment authorities under T.C.A. §68-212-105, T.C.A. §68-212-111, T.C.A. §68-212-114, and T.C.A. §68-212-115, if the munition lands off-range and is not promptly rendered safe and/or retrieved. Any imminent and substantial threats associated with any remaining material must be addressed. If remedial action is infeasible, the operator of the range must maintain a record of the event for as long as any threat remains. The record must include the type of munition and its location (to the extent the location is known).

(d) Standards Applicable to the Transportation of Solid Waste Military Munition [40 CFR 266.203]

1. Criteria for hazardous waste regulation of waste non-chemical military munitions in transportation.

(i) Waste military munitions that are being transported and that exhibit a hazardous waste characteristic or are listed as hazardous waste under Rule 1200-01-11-.02, are listed or identified as a hazardous waste (and thus are subject to regulation under Rule 1200-01-11-.01 through .10), unless all the following conditions are met:

(I) The waste military munitions are not chemical agents or chemical munitions;

(II) The waste military munitions must be transported in accordance with the Department of Defense shipping controls applicable to the transport of military munitions;

(III) The waste military munitions must be transported from a military owned or operated installation to a military owned or operated treatment, storage, or disposal facility; and

(IV) The transporter of the waste must provide oral notice to the Division Director within 24 hours from the time the transporter becomes aware of any loss or theft of the waste military munitions or any failure to meet a condition of subpart 1(i) of this subparagraph that may endanger health or the environment. In addition, a written submission describing the circumstances shall be provided within 5 days from the time the transporter becomes aware of any loss or theft of the waste military munitions or any failure to meet a condition of subpart 1(i) of this subparagraph.

(ii) If any waste military munitions shipped under subpart 1(i) of this subparagraph are not received by the receiving facility within 45 days of the day the waste was shipped, the owner or operator of the receiving facility must report this non-receipt to the Director within 5 days.

(iii) The exemption in subpart 1(i) of this subparagraph from regulation as hazardous waste shall apply only to the transportation of non-chemical waste military munitions. It does not affect the regulatory status of waste military munitions as hazardous wastes with regard to storage, treatment or disposal.

(iv) The conditional exemption in subpart 1(i) of this subparagraph applies only so long as all of the conditions in subpart 1(i) of this subparagraph are met.

2. Reinstatement of exemption. If any waste military munition loses its exemption under subpart 1(i) of this subparagraph, an application may be filed with the Commissioner for reinstatement of the exemption from hazardous waste transportation regulation with respect to such munition as soon as the munition is returned to compliance with the conditions of subpart 1(i) of this subparagraph. If the Commissioner finds that reinstatement of the exemption is appropriate based on factors such as the transporter's provision of a satisfactory explanation of the circumstances of the violation or a demonstration that the violations are not likely to recur, the Commissioner may reinstate the exemption under subpart 1(i) of this subparagraph. If the Commissioner does not take action on the reinstatement application within 60 days after receipt of the application, then reinstatement shall be deemed granted, retroactive to the date of the application. However, the Commissioner may terminate a conditional exemption reinstated by default in the preceding sentence if the Commissioner finds that reinstatement is inappropriate based on factors such as the transporter's failure to provide a satisfactory explanation of the circumstances of the violation or failure to demonstrate that the violations are not likely to recur. In reinstating the exemption under subpart 1(i) of this subparagraph, the Commissioner may specify additional conditions as are necessary to ensure and document proper transportation to protect human health and the environment.

3. Amendments to DOD shipping controls. The Department of Defense shipping controls applicable to the transport of military munitions referenced in item 1(i)(II) of this subparagraph are Government Bill of Lading (GBL) (GSA Standard Form 1109), requisition tracking form DD Form 1348, the Signature and Talley Record (DD Form 1907), Special Instructions for Motor Vehicle Drivers (DD Form 836), and the Motor Vehicle Inspection Report (DD Form 626) in effect on November 8, 1995, except as provided in the following sentence. Any amendments to the Department of Defense shipping controls shall become effective for purposes of subpart 1(i) of this subparagraph on the date the Department of Defense publishes notice in the Federal Register that the shipping controls referenced in item 1(i)(II) of this subparagraph have been amended.

(e) Standards Applicable to Emergency Responses [40 CFR 266.204]

Explosives and munitions emergencies involving military munitions or explosives are subject to Rules 1200-01-11-.03(1)(a)10, .04(1)(a)6, .06(1)(b)2(vii), .05(1)(b)2(vii), and .07(1)(b)5, or alternatively to .07(1)(d).

(f) Standards Applicable to the Storage of Solid Waste Military Munitions [40 CFR 266.205]

1. Criteria for hazardous waste regulation of waste non-chemical military munitions in storage.

(i) Waste military munitions in storage that exhibit a hazardous waste characteristic or are listed as hazardous waste under Rule 1200-01-11-.02 are listed or identified as a hazardous waste (and thus are subject to regulation under Rules 1200-01-11-.01 through .10), unless all the following conditions are met:

(I) The waste military munitions are not chemical agents or chemical munitions.

(II) The waste military munitions must be subject to the jurisdiction of the Department of Defense Explosives Safety Board (DDESB).

(III) The waste military munitions must be stored in accordance with the DDESB storage standards applicable to waste military munitions.

(IV) Within 90 days of August 12, 1997 or within 90 days of when a storage unit is first used to store waste military munitions, whichever is later, the owner or operator must notify the Commissioner of the location of any waste storage unit used to store waste military munitions for which the conditional exemption in subpart 1(i) of this subparagraph is claimed.

(V) The owner or operator must provide oral notice to the Commissioner within 24 hours from the time the owner or operator becomes aware of any loss or theft of the waste military munitions or any failure to meet a condition of subpart 1(i) of this subparagraph that may endanger health or the environment. In addition, a written submission describing the circumstances shall be provided within 5 days from the time the owner or operator becomes aware of any loss or theft of the waste military munitions or any failure to meet a condition of subpart 1(i) of this subparagraph.

(VI) The owner or operator must inventory the waste military munitions at least annually, must inspect the waste military munitions at least quarterly for compliance with the conditions of subpart 1(i) of this subparagraph, and must maintain records of the findings of these inventories and inspections for at least three years.

(VII) Access to the stored waste military munitions must be limited to appropriately trained and authorized personnel.

(ii) The conditional exemption in subpart 1(i) of this subparagraph from regulation as hazardous waste shall apply only to the storage of non-chemical waste military munitions. It does not affect the regulatory status of waste military munitions as hazardous wastes with regard to transportation, treatment or disposal.

(iii) The conditional exemption in subpart 1(i) of this subparagraph applies only so long as all of the conditions in subpart 1(i) of this subparagraph are met.

2. Notice of termination of waste storage. The owner or operator must notify the Commissioner when a storage unit identified in subpart 1(i) of this subparagraph will no longer be used to store waste military munitions.

3. Reinstatement of conditional exemption. If any waste military munition loses its conditional exemption under subpart 1(i) of this subparagraph, an application may be filed with the Commissioner for reinstatement of the conditional exemption from hazardous waste storage regulation with respect to such munition as soon as the munition is returned to compliance with the conditions of subpart 1(i) of this subparagraph. If the Commissioner finds that reinstatement of the conditional exemption is appropriate based on factors such as the owner's or operator's provision of a satisfactory explanation of the circumstances of the violation or a demonstration that the violations are not likely to recur, the Commissioner may reinstate the conditional exemption under subpart 1(i) of this subparagraph. If the Commissioner does not take action on the reinstatement application within 60 days after receipt of the application, then reinstatement shall be deemed granted, retroactive to the date of the application. However, the Commissioner may terminate a conditional exemption reinstated by default in the preceding sentence if he/she finds that reinstatement is inappropriate based on factors such as the owner's or operator's failure to provide a satisfactory explanation of the circumstances of the violation or failure to demonstrate that the violations are not likely to recur. In reinstating the conditional exemption under subpart 1(i) of this subparagraph, the Commissioner may specify additional conditions as are necessary to ensure and document proper storage to protect human health and the environment.

4. Waste chemical munitions.

(i) Waste military munitions that are chemical agents or chemical munitions and that exhibit a hazardous waste characteristic or are listed as hazardous waste under Rule 1200-01-11-.02, are listed or identified as a hazardous waste and shall be subject to the applicable regulatory requirements of Rule Chapter 1200-01-11.

(ii) Waste military munitions that are chemical agents or chemical munitions and that exhibit a hazardous waste characteristic or are listed as hazardous waste under Rule 1200-01-11-.02 are not subject to the storage prohibition in Rule 1200-01-11-.10(4)(a).

5. Amendments to DDESB storage standards. The DDESB storage standards applicable to waste military munitions, referenced in item 1(i)(III) of this subparagraph, are DOD 6055.9-STD (``DOD Ammunition and Explosive Safety Standards''), in effect on November 8, 1995, except as provided in the following sentence. Any amendments to the DDESB storage standards shall become effective for purposes of subpart 1(i) of this subparagraph on the date the Department of Defense publishes notice in the Federal Register that the DDESB standards referenced in subpart 1(i) of this subparagraph have been amended.

(g) Standards Applicable to the Treatment and Disposal of Waste Military Munitions [40 CFR 266.206]

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 through .10.

(14) Conditional Exemption for Low-Level Mixed Waste Storage, Treatment, Transportation and Disposal (40 CFR 266 Subpart N)

(a) Definitions

1. What definitions apply to this subpart? (266.210)
This part uses the following special definitions:

"Agreement State" means a state that has entered into an agreement with the NRC under subsection 274b of the Atomic Energy Act of 1954, as amended (68 Stat. 919), to assume responsibility for regulating within its borders byproduct, source, or special nuclear material in quantities not sufficient to form a critical mass.

"Certified Delivery" means certified mail with return receipt requested, or equivalent courier service, or other means, that provides the sender with a receipt confirming delivery.

"Commissioner" refers to the definition in Rule 1200-01-11-.01(2)(a).

"Eligible Naturally Occurring and/or Accelerator-produced Radioactive Material (NARM)" is NARM that is eligible for the Transportation and Disposal Conditional Exemption. It is a NARM waste that contains hazardous waste, meets the waste acceptance criteria of, and is allowed by Sate NARM regulations to be disposed of at a low-level radioactive waste disposal facility (LLRWDF) licensed in accordance with 10 CFR part 61 or NRC Agreement State equivalent regulations.

"Exempted Waste" means a waste that meets the eligibility criteria in part (b)6 of this paragraph and meets all of the conditions in part (b)11 of this paragraph, or meets the eligibility criteria in part (m)1 of this paragraph and complies with all the conditions in part (n)1 of this paragraph. Such waste is conditionally exempted from the regulatory definition of hazardous waste described in Rule 1200-01-11-.02(1)(c).

"Hazardous Waste" means any material which is defined to be hazardous waste in accordance with Rule 1200-01-11-.02(1)(c), "Definition of Hazardous Waste".

"Land Disposal Restriction (LDR) Treatment Standards" means treatment standards, under Rule 1200-01-11-.10, that a hazardous waste must meet before it can be disposed of in a hazardous waste land disposal unit.

"License" means a license issued by the Nuclear Regulatory Commission, or NRC Agreement State, to users that manage radionuclides regulated by NRC, or NRC Agreement States, under authority of the Atomic Energy Act of 1954, as mended.

"Low-Level Mixed Waste (LLMW)" is a waste that contains both low-level radioactive waste and hazardous waste.

"Low-Level Radioactive Waste (LLW) is a radioactive waste which contains source, special nuclear, or byproduct material, and which is not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material as defined in section 11e.(2) of the Atomic Energy Act. (See also NRC definition of "waste" at 10 CRF 61.2)

"Mixed Waste" means a waste that contains both hazardous waste and source, special nuclear, or byproduct material subject to the Atomic Energy Act of 1954, as amended.
"Naturally Occurring and/or Accelerator-produced Radioactive Material (NARM)" means radioactive materials that:

(1) Are naturally occurring and are not source, special nuclear, or byproduct materials (as defined by the AEA) or

(2) Are produced by an accelerator. NARM is regulated by the States under
State law, or by DOE (as authorized by the AEA) under DOE orders.

"NRC" means the U.S. Nuclear Regulatory Commission.

"We" or "Us" within this paragraph means the Commissioner as defined in Rule 1200-01-11-.01(2)(a).

"You" means a generator, treater, or other handler of low-level mixed waste or eligible NARM.

2.-5. (RESERVED)

(b) Storage and Treatment Conditional Exemption and Eligibility

1. What does a storage and treatment conditional exemption do? (266.220)

The storage and treatment conditional exemption exempts your low-level mixed Waste from the regulatory definition of hazardous waste in Rule 1200-01-11-.02(1)(c) if your waste meets the eligibility criteria in part 6 of this subparagraph and you meet the conditions in part 11 of this subparagraph.

2.-5. (RESERVED)

6. What wastes are eligible for the storage and treatment conditional exemption? (266.225)

Low-level mixed waste (LLMW), defined in part (a)1 of this paragraph for this conditional exemption if it is generated and managed by you under a single NRC or NRC Agreement State license. (Mixed waste generated at a facility with a different license number and shipped to your facility for storage or treatment requires a permit and is ineligible for this exemption. In addition, NARM waste is ineligible this exemption.)

7.-10. (RESERVED)

11. What conditions must you meet for your LLMW to qualify for and maintain a Storage and treatment exemption? (266.230)

(i) For your LLMW to qualify for the exemption you must notify us in writing by certified delivery that you are claiming a conditional exemption for the LLMW stored on your facility. The dated notification must include your name, address, installation identification number, NRC or NRC Agreement State license number, the hazardous waste code(s) and storage unit(s) for

which you are seeking an exemption, and a statement that you meet the conditions of this paragraph. Your notification must be signed by your authorized representative who certifies that the information in the notification is true, accurate, and complete. You must notify us of your claim either within 90 days of the effective date of this rule or within 90 days of when a storage unit is first used to store conditionally exempt LLMW.

(ii) To qualify for and maintain an exemption for your LLMW you must:

(I) Store your LLMW waste in tanks or containers in compliance with the requirements of your license that apply to the proper storage of low-level radioactive waste (not including those license requirements that relate solely to recordkeeping);

(II) Store your LLMW in tanks or containers in compliance with chemical compatibility requirements of a tank or container in subparagraph (9)(h) or (10)(j) of Rule 1200-01-11-.05 or subparagraph (9)(h) or (10)(j) or Rule 1200-11-.06;

(III) Certify that facility personnel who manage stored conditionally Exempt LLMW are trained in a manner that ensures that the conditionally exempt waste is safely managed and includes training in chemical waste management and hazardous materials incidents response that meets the personnel training standards found in subpart (2)(g)1(iii) of Rule 1200-01-11-.05;

(IV) Conduct an inventory of your stored conditionally exempt LLMW at least annually and inspect it at least quarterly for compliance with paragraph (14) of this Rule; and

(V) Maintain an accurate emergency plan and provide it to all local authorities who may have to respond to a fire, explosion, or release of hazardous waste or hazardous constituents. Your plan must describe emergency response arrangements with local authorities; describe evacuation plans; list the names, addresses, and telephone numbers of all facility personnel qualified to work with local authorities as emergency coordinators; and list emergency equipment.

12.-15. (RESERVED)

(c) Treatment

1. What waste treatment does the storage and treatment conditional exemption allow? (266.235)

You may treat your low-level mixed waste at your facility within a tank or container in accordance with the terms of your NRC or NRC Agreement State license. Treatment that cannot be done in a tank or container without a permit (such as incineration) is not allowed under this exemption.

2.-5. (RESERVED)

(d) Loss of Conditional Exemption

1. How could you lose the conditional exemption for your LLMW and what action must you take? (266.240)

(i) Your LLMW will automatically lose the storage and treatment conditional exemption if you fail to meet any of the conditions specified in part (b)11 of this paragraph. When your LLMW loses the exemption, you must immediately manage that waste which failed the condition as hazardous waste, and the storage unit storing the LLMW immediately becomes subject to hazardous waste container and/or tank storage requirements.

(I) If you fail to meet any of the conditions specified in part (b)11 of this paragraph you must report to us and the NRC, or the oversight agency in the NRC Agreement State, in writing by certified delivery within 30 days of learning of the failure. Your report must be signed by your authorized representative certifying that the information provided is true, accurate, and complete. This report must include:

I. The specific condition(s) you failed to meet;

II. A description of the LLMW (including the waste name, hazardous waste codes and quantity) and storage location at the facility; and

III. The date(s) on which you failed to meet the condition(s).

(II) If the failure to meet any of the conditions may endanger human health or the environment, you must also immediately notify us orally within 24 hours and follow up with a written notification within five days. Failures that may endanger human health or the environment include, but are not limited to, discharge of a CERCLA reportable quantity or other leaking or exploding tanks or containers, or detection of radionuclides above background or hazardous constituents in the leachate collection system of a storage area. If the failure may endanger human health or the environmental, you must follow the provisions of your emergency plan.

(ii) We may terminate your conditional exemption for your LLMW, or require you to meet additional conditions to claim a conditional exemption, for serious or repeated noncompliance with any requirement(s) of this paragraph.

2.-5. (RESERVED)

6. If you lose the storage and treatment conditional exemption for your LLMW, can the exemption be reclaimed? (266.245)

(i) You may reclaim the storage and treatment for your LLMW if:

(I) You again meet the conditions specified in part (b)11 of this paragraph;

(II) You send us a notice by certified delivery that you are reclaiming the exemption for your LLMW. Your notice must be signed by your

authorized representative certifying that the information contained in your notice is true, complete, and accurate. In your notice you must do the following:

I. Explain the circumstances of each failure.

II. Certify that you have corrected each failure that caused you to lose the exemption for your LLMW and that you again meet all the conditions as of the date you specify.

III. Describe plans that you have implemented, listing specific steps you have taken, to ensure the conditions will be met in the future.

IV. Include any other information you want us to consider when we review your notice reclaiming the exemption.

(ii) We may terminate a reclaimed conditional exemption if we find that your claim is inappropriate based on factors including, but not limited to, the following:

you have failed to correct the problem;

you explained the circumstances of the failure unsatisfactorily; or

you failed to implement a plan with steps to prevent another failure to meet the conditions of part (b)11 of this paragraph.

In reviewing a reclaimed conditional exemption under this section, we may add conditions to the exemption to ensure that waste management during storage and treatment of the LLMW will protect human health and the environment.

(e) Recordkeeping

1. What records must you keep at your facility and for how long? (266.250)

(i) In addition to those records required by your NRC or NRC Agreement State license, you must keep records as follows:

(I) Your initial notification records, return receipts, reports to us of failure(s) to meet the exemption conditions, and all records supporting any reclaim of an exemption;

(II) Records of your LLMW annual inventories, and quarterly inspections;

(III) Your certification that facility personnel who manage stored mixed waste are trained in safe management of LLMW including training in chemical waste management and hazardous materials incidents response; and

(IV) Your emergency plan as specified in subpart (b)11(ii) of this paragraph.

(ii) You must maintain records concerning notification, personnel trained, and your emergency plan for as long as you claim this exemption and for three years thereafter, or in accordance with NRC regulations under 10 CFR part 20 (or equivalent NRC Agreement State regulations), whichever is longer. You must maintain records concerning your annual inventory and quarterly inspections for three years after the waste is sent for disposal, or in accordance with NRC regulations under 10 CFR part 20 (or equivalent NRC Agreement State regulations), whichever is longer.

2.-5. (RESERVED)

(f) Reentry Into RCRA

1. When is your LLMW no longer eligible for the storage and treatment conditional exemption? (266.255)

(i) When your LLMW has met the requirements of your NRC or NRC Agreement State license for decay-in-storage and can be disposed of as non-radioactive waste, then the conditional exemption for storage no longer applies. On that date your waste is subject to hazardous waste regulation under the relevant sections of Rules 1200-01-11-.01 through .10, and the time period for accumulation of a hazardous waste as specified in subparagraph (4)(e) of Rule 1200-01-11-.03 begins.

(ii) When your conditionally exempt LLMW, which has been generated and stored under a single NRC or NRC Agreement State license number, is removed from storage, it is no longer eligible for the storage and treatment exemption. However, your waste may be eligible for the transportation and disposal conditional exemption at part (l)1 of this paragraph.

(g) Storage Unit Closure

1. Do closure requirements apply to units that stored LLMW prior to the effective date of paragraph (14) of this Rule? (266.260)

Interim status and permitted storage units that have been used to store only LLMW prior to the effective date of subpart N of this part and, after that date, store only LLMW which becomes exempt under this subpart N, are not subject to the closure requirements of Rules 1200-01-11-.05 and .06. Storage units (or portions of units) that have been used to store both LLMW and non-mixed hazardous waste prior to the effective date of paragraph (14) of this Rule or are used to store both after that date remain subject to closure requirements with respect to the non-mixed hazardous waste.

2.-5. (RESERVED)

(h)-(k) (RESERVED)

(l) Transportation and Disposal Conditional Exemption

1. What does the transportation and disposal conditional exemption do? (266.305)

This conditional exemption exempts your waste from the regulatory definition of hazardous waste in Rule 1200-01-11-.02(1)(c) if your waste meets the eligibility criteria under part (m)1 of this paragraph, and you meet the conditions in part (n)1 of this paragraph.

(m) Eligibility

1. What wastes are eligible for the transportation and disposal conditional exemption? (266.310)

Eligible waste must be:

(i) A low-level mixed waste (LLMW), as defined in part (a)1 of this paragraph that meets the waste acceptance criteria of a LLRWDF; and/or

(ii) An eligible NARM waste, defined in part (a)1 of this paragraph

2.-5. (RESERVED)

(n) Conditions

1. What are the conditions you must meet for your waste to qualify for and maintain the transportation and disposal conditional exemption? (266.315)

You must meet the following conditions for your eligible waste to qualify for and maintain the exemption:

(i) The eligible waste must meet or be treated to meet LDR treatment standards as described in part (n)6 of this paragraph.

(ii) If you are not already subject to NRC, or NRC Agreement State equivalent manifest and transportation regulations for the shipment of your waste, you must manifest and transport your waste according to NRC regulations as described in part (n)11 of this paragraph.

(iii) The exempted waste must be in containers when it is disposed of in the LLRWDF as described in part (n)26 of this paragraph.

(iv) The exempted waste must be disposed of at a designated LLRWDF as described in part (n)21 of this paragraph.

2.-5. (RESERVED)

6. What treatment standards must your eligible waste meet? (266.320)

Your LLMW or eligible NARM waste must meet Land Disposal Restriction (LDR) treatment standards specified in paragraph (3) of Rule 1200-01-11-.10.

7.-10. (RESERVED)

11. Are you subject to the manifest and transportation condition in subpart (n)1(ii) of this paragraph? (266.325)

If you are not already subject to NRC, or NRC Agreement State equivalent manifest and transportation regulations for the shipment of your waste, you must meet the manifest requirements under 10 CFR 20.2006 (or NRC Agreement State equivalent regulations), and the transportation requirements under 10 CFR 1.5 (or NRC Agreement State equivalent regulations) to ship the exempted waste.

12.-15. (RESERVED)

16. When does the transportation and disposal exemption take effect? (266.330)

The exemption becomes effective once all the following have occurred:

(i) Your eligible waste meets the applicable LDR treatment standards.

(ii) You have received return receipts that you have notified us and the LLRWDF as described in part (o)1 of this paragraph.

(iii) You have completed the packaging and preparation for shipment requirements for your waste according to NRC Packaging and Transportation regulations found under 10 CFR part 71 (or NRC Agreement State equivalent regulations); and you have prepared a manifest for your waste according to NRC manifest regulations found under 10 CFR part 20 (or NRC Agreement State equivalent regulations), and

(iv) You have placed your waste on a transportation vehicle destined for a LLRWDF licensed by NRC or an NRC Agreement State.

17.-20. (RESERVED)

21. Where must your exempted waste be disposed of? (266.335)

Your exempted waste must be disposed of in a LLRWDF that is regulated and licensed by NRC under 10 CFR part 61 or by an NRC Agreement State under equivalent State regulations, including State NARM licensing regulations for eligible NARM.

22.-25. (RESERVED)

26. What type of container must be used for disposal of exempted waste? (266.340)

Your exempted waste must be placed in containers before it is disposed. The container must be:

(i) A carbon steel drum; or

(ii) An alternative container with equivalent containment performance in the disposal environment as a carbon steel drum; or

(iii) A high integrity container as defined by NRC.

27.-30. (RESERVED)

(o) Notification

1. Whom must you notify? (266.345)

(i) You must provide a one time notice to us stating that you are claiming the transportation and disposal conditional exemption prior to the initial shipment of an exempted waste from your facility to a LLRWDF. Your dated written notice must include your facility name, address, phone number, and installation ID number, and be sent by certified delivery.

(ii) You must notify the LLRWDF receiving your exempted waste by certified delivery before shipment of each exempted waste. You can only ship the exempted waste after you have received the return receipt of your notice to the LLRWDF. This notification must include the following:

(I) A statement that you have claimed the exemption for the waste.

(II) A statement that the eligible waste meets applicable LDR treatment standards.

(III) Your facility's name, address, and installation number.

(IV) The hazardous waste codes prior to the exemption of the waste streams.

(V) A statement that the exempted waste must be placed in a container according to part (n)26 of this paragraph prior to disposal in order for the waste to remain exempt under the transportation and disposal conditional exemption of paragraph (14) of this Rule.

(VI) The manifest number of the shipment that will contain the exempted waste.

(VII) A certification that all the information provided is true, complete, and accurate. The statement must be signed by your authorized representative.

2.-5. (RESERVED)

(p) Recordkeeping

1. What records must you keep at your facility and for how long? (266.350)

In addition to those records required by your NRC or NRC Agreement State license, you must keep records as follows:

(i) You must follow the applicable existing recordkeeping requirements under subparagraph (5)(d) of Rule 1200-01-11-05, subparagraph (5)(d) of Rule 1200-01-11-.06, and subparagraph (1)(g) of Rule 1200-01-11-.10 to demonstrate that your waste has met LDR treatment standards prior to your claiming the exemption.

(ii) You must keep a copy of all notifications and return receipts required under parts (q)1 and (q)6 of this paragraph for three years after the exempted waste is sent for disposal.

(iii) You must keep a copy of all notification and return receipts required under subpart (o)1(i) of this paragraph for three years after the last exempted waste is sent for disposal.

(iv) You must keep a copy of the notification and return receipt required under subpart (o)1(ii) of this paragraph for three years after the exempted waste is sent for disposal.

(v) If you are not already subject to NRC, or NRC Agreement State equivalent manifest and transportation regulations for the shipment of your waste, you must also keep all other documents related to tracking the exempted waste as required under 10 CFR 20.2006 or NRC Agreement State equivalent regulations, including applicable NARM requirements, in addition to the records specified in subpart (p)1(i) through subpart (p)1(iv) of this paragraph.

(q) Loss of Transportation and Disposal Conditional Exemption

1. How could you lose the transportation and disposal conditional exemption for your waste and what action must you take? (266.355)

(i) Any waste will automatically lose the transportation and disposal exemption if you fail to manage it in accordance with all of the conditions specified in part (n)1 of this paragraph.

(I) When you fail to meet any of the conditions specified in part (n)1 of this paragraph for any of your wastes, you must report to us, in writing by certified delivery, within 30 days of learning of the failure. Your report must be signed by your authorized representative certifying that the information provided is true, accurate, and complete. This report must include:

I. The specific condition(s) that you failed to meet for the waste;

II. A description of the waste (including the waste name, hazardous waste codes and quantity) that lost the exemption; and

III. The date(s) on which you failed to meet the condition(s) for the waste.

(II) If the failure to meet any of the conditions may endanger human health or the environment, you must also immediately notify us orally within 24 hours and follow up with a written notification within 5 days.

(ii) We may terminate your ability to claim a conditional exemption for your waste, or require you to meet additional conditions to claim a conditional exemption, for serious or repeated noncompliance with any requirement(s) of paragraph (14) of this Rule.

2.-5. (RESERVED)

6. If you lose the transportation and disposal conditional exemption for a waste, can the exemption be reclaimed? (266.360)

(i) You may reclaim the transportation and disposal exemption for a waste after you have received a return receipt confirming that we have received your notification of the loss of the exemption specified in subpart (q)1(i) of this paragraph and if:

(I) You again meet the conditions specified in part (n)1 of this paragraph for the waste; and

(II) You send a notice, by certified delivery, to us that you are reclaiming the exemption for the waste. Your notice must be signed by your authorized representative certifying that the information provided is true, accurate, and complete. The notice must:

I. Explain the circumstances of each failure.

II. Certify that each failure that caused you to lose the exemption for the waste has been corrected and that you again meet all conditions for the waste as of the date you specify.

III. Describe plans you have implemented, listing the specific steps that you have taken, to ensure that conditions will be met in the future.

IV. Include any other information you want us to consider when we review your notice reclaiming the exemption.

(ii) We may terminate a reclaimed conditional exemption if we find that your claim is inappropriate based on factors including, but not limited to:

you have failed to correct the problem;

you explained the circumstances of the failure unsatisfactorily; or

you failed to implement a plan with steps to prevent another failure to meet the conditions of part (n)1 of this paragraph.

In reviewing a reclaimed conditional exemption under this section, we may add conditions to the exemption to ensure that transportation and disposal activities will protect human health and the environment.

(15) - (26) (RESERVED) [40 CFR 266 Subpart O-Z]

(27) - (29) (RESERVED) [40 CFR 266 Subpart AA-CC]

(30) APPENDICES TO RULE 1200-01-11-.09 [40 CFR 266 APPENDICES]

Appendix I-Tier I and Tier II Feed Rate and Emissions Screening Limits for Metals [40 CFR 266 APPENDIX I]

Table I-A.-Tier I and Tier II Feed Rate and Emissions Screening Limits for Noncarcinogenic Metals for Facilities in Noncomplex Terrain

[Values for Urban Areas]

Terrain-adjusted Eff. Stack Ht. (m)	Antimony (g/hr)	Barium (g/hr)	Lead (g/hr)	Mercury (g/hr)	Silver (g/hr)	Thallium (g/hr)
4	6.0E+01	1.0E+04	1.8E+01	6.0E+01	6.0E+02	6.0E+01
6	6.8E+01	1.1E+04	2.0E+01	6.8E+01	6.8E+02	6.8E+01
8	7.6E+01	1.3E+04	2.3E+01	7.6E+01	7.6E+02	7.6E+01
10	8.6E+01	1.4E+04	2.6E+01	8.6E+01	8.6E+02	8.6E+01
12	9.6E+01	1.7E+04	3.0E+01	9.6E+01	9.6E+02	9.6E+01
14	1.1E+02	1.8E+04	3.4E+01	1.1E+02	1.1E+03	1.1E+02
16	1.3E+02	2.1E+04	3.6E+01	1.3E+02	1.3E+03	1.3E+02
18	1.4E+02	2.4E+04	4.3E+01	1.4E+02	1.4E+03	1.4E+02
20	1.6E+02	2.7E+04	4.6E+01	1.6E+02	1.6E+03	1.6E+02
22	1.8E+02	3.0E+04	5.4E+01	1.8E+02	1.8E+03	1.8E+02
24	2.0E+02	3.4E+04	6.0E+01	2.0E+02	2.0E+03	2.0E+02
26	2.3E+02	3.9E+04	6.8E+01	2.3E+02	2.3E+03	2.3E+02
28	2.6E+02	4.3E+04	7.8E+01	2.6E+02	2.6E+03	2.6E+02
30	3.0E+02	5.0E+04	9.0E+01	3.0E+02	3.0E+03	3.0E+02
35	4.0E+02	6.6E+04	1.1E+02	4.0E+02	4.0E+03	4.0E+02
40	4.6E+02	7.8E+04	1.4E+02	4.6E+02	4.6E+03	4.6E+02
45	6.0E+02	1.0E+05	1.8E+02	6.0E+02	6.0E+03	6.0E+02
50	7.8E+02	1.3E+05	2.3E+02	7.8E+02	7.8E+03	7.8E+02
55	9.6E+02	1.7E+05	3.0E+02	9.6E+02	9.6E+03	9.6E+02
60	1.2E+03	2.0E+05	3.6E+02	1.2E+03	1.2E+04	1.2E+03
65	1.5E+03	2.5E+05	4.3E+02	1.5E+03	1.5E+04	1.5E+03
70	1.7E+03	2.8E+05	5.0E+02	1.7E+03	1.7E+04	1.7E+03
75	1.9E+03	3.2E+05	5.8E+02	1.9E+03	1.9E+04	1.9E+03
80	2.2E+03	3.6E+05	6.4E+02	2.2E+03	2.2E+04	2.2E+03
85	2.5E+03	4.0E+05	7.6E+02	2.5E+03	2.5E+04	2.5E+03

90	2.8E+03	4.6E+05	8.2E+02	2.8E+03	2.8E+04	2.8E+03
95	3.2E+03	5.4E+05	9.6E+02	3.2E+03	3.2E+04	3.2E+03
100	3.6E+03	6.0E+05	1.1E+03	3.6E+03	3.6E+04	3.6E+03
105	4.0E+03	6.8E+05	1.2E+03	4.0E+03	4.0E+04	4.0E+03
110	4.6E+03	7.8E+05	1.4E+03	4.6E+03	4.6E+04	4.6E+03
115	5.4E+03	8.6E+05	1.6E+03	5.4E+03	5.4E+04	5.4E+03
120	6.0E+03	1.0E+06	1.8E+03	6.0E+03	6.0E+04	6.0E+03

Table I-B.-Tier I and Tier II Feed Rate and Emissions Screening Limits for Noncarcinogenic Metals for Facilities in Noncomplex Terrain

[Values for Rural Areas]

Terrain-adjusted Eff. Stack Ht. (m)	Antimony (g/hr)	Barium (g/hr)	Lead (g/hr)	Mercury (g/hr)	Silver (g/hr)	Thallium (g/hr)
4	3.1E+01	5.2E+03	9.4E+00	3.1E+01	3.1E+02	3.1E+01
6	3.6E+01	6.0E+03	1.1E+01	3.6E+01	3.6E+02	3.6E+01
8	4.0E+01	6.8E+03	1.2E+01	4.0E+01	4.0E+02	4.0E+01
10	4.6E+01	7.8E+03	1.4E+01	4.6E+01	4.6E+02	4.6E+01
12	5.8E+01	9.6E+03	1.7E+01	5.8E+01	5.8E+02	5.8E+01
14	6.8E+01	1.1E+04	2.1E+01	6.8E+01	6.8E+02	6.8E+01
16	8.6E+01	1.4E+04	2.6E+01	8.6E+01	8.6E+02	8.6E+01
18	1.1E+02	1.8E+04	3.2E+01	1.1E+02	1.1E+03	1.1E+02
20	1.3E+02	2.2E+04	4.0E+01	1.3E+02	1.3E+03	1.3E+02
22	1.7E+02	2.8E+04	5.0E+01	1.7E+02	1.7E+03	1.7E+02
24	2.2E+02	3.6E+04	6.4E+01	2.2E+02	2.2E+03	2.2E+02
26	2.8E+02	4.6E+04	8.2E+01	2.8E+02	2.8E+03	2.8E+02
28	3.5E+02	5.8E+04	1.0E+02	3.5E+02	3.5E+03	3.5E+02
30	4.3E+02	7.6E+04	1.3E+02	4.3E+02	4.3E+03	4.3E+02
35	7.2E+02	1.2E+05	2.1E+02	7.2E+02	7.2E+03	7.2E+02
40	1.1E+03	1.8E+05	3.2E+02	1.1E+03	1.1E+04	1.1E+03
45	1.5E+03	2.5E+05	4.6E+02	1.5E+03	1.5E+04	1.5E+03
50	2.0E+03	3.3E+05	6.0E+02	2.0E+03	2.0E+04	2.0E+03
55	2.6E+03	4.4E+05	7.8E+02	2.6E+03	2.6E+04	2.6E+03
60	3.4E+03	5.8E+05	1.0E+03	3.4E+03	3.4E+04	3.4E+03

65	4.6E+03	7.6E+05	1.4E+03	4.6E+03	4.6E+04	4.6E+03
70	5.4E+03	9.0E+05	1.6E+03	5.4E+03	5.4E+04	5.4E+03
75	6.4E+03	1.1E+06	1.9E+03	6.4E+03	6.4E+04	6.4E+03
80	7.6E+03	1.3E+06	2.3E+03	7.6E+03	7.6E+04	7.6E+03
85	9.4E+03	1.5E+06	2.8E+03	9.4E+03	9.4E+04	9.4E+03
90	1.1E+04	1.8E+06	3.3E+03	1.1E+04	1.1E+05	1.1E+04
95	1.3E+04	2.2E+06	3.9E+03	1.3E+04	1.3E+05	1.3E+04
100	1.5E+04	2.6E+06	4.6E+03	1.5E+04	1.5E+05	1.5E+04
105	1.8E+04	3.0E+06	5.4E+03	1.8E+04	1.8E+05	1.8E+04
110	2.2E+04	3.6E+06	6.6E+03	2.2E+04	2.2E+05	2.2E+04
115	2.6E+04	4.4E+06	7.8E+03	2.6E+04	2.6E+05	2.6E+04
120	3.1E+04	5.0E+06	9.2E+03	3.1E+04	3.1E+05	3.1E+04

Table I-C.-Tier I and Tier II Feed Rate and Emissions Screening Limits for Noncarcinogenic Metals for Facilities in Complex Terrain

[Values for Urban and Rural Areas]

Terrain-adjusted Eff. Stack Ht. (m)	Antimony (g/hr)	Barium (g/hr)	Lead (g/hr)	Mercury (g/hr)	Silver (g/hr)	Thallium (g/hr)
4	1.4E+01	2.4E+03	4.3E+00	1.4E+01	1.4E+02	1.4E+01
6	2.1E+01	3.5E+03	6.2E+00	2.1E+01	2.1E+02	2.1E+01
8	3.0E+01	5.0E+03	9.2E+00	3.0E+01	3.0E+02	3.0E+01
10	4.3E+01	7.6E+03	1.3E+01	4.3E+01	4.3E+02	4.3E+01
12	5.4E+01	9.0E+03	1.7E+01	5.4E+01	5.4E+02	5.4E+01
14	6.8E+01	1.1E+04	2.0E+01	6.8E+01	6.8E+02	6.8E+01
16	7.8E+01	1.3E+04	2.4E+01	7.8E+01	7.8E+02	7.8E+01
18	8.6E+01	1.4E+04	2.6E+01	8.6E+01	8.6E+02	8.6E+01
20	9.6E+01	1.6E+04	2.9E+01	9.6E+01	9.6E+02	9.6E+01
22	1.0E+02	1.8E+04	3.2E+01	1.0E+02	1.0E+03	1.0E+02
24	1.2E+02	1.9E+04	3.5E+01	1.2E+02	1.2E+03	1.2E+02
26	1.3E+02	2.2E+04	3.6E+01	1.3E+02	1.3E+03	1.3E+02
28	1.4E+02	2.4E+04	4.3E+01	1.4E+02	1.4E+03	1.4E+02
30	1.6E+02	2.7E+04	4.6E+01	1.6E+02	1.6E+03	1.6E+02
35	2.0E+02	3.3E+04	5.8E+01	2.0E+02	2.0E+03	2.0E+02

40	2.4E+02	4.0E+04	7.2E+01	2.4E+02	2.4E+03	2.4E+02
45	3.0E+02	5.0E+04	9.0E+01	3.0E+02	3.0E+03	3.0E+02
50	3.6E+02	6.0E+04	1.1E+02	3.6E+02	3.6E+03	3.6E+02
55	4.6E+02	7.6E+04	1.4E+02	4.6E+02	4.6E+03	4.6E+02
60	5.8E+02	9.4E+04	1.7E+02	5.8E+02	5.8E+03	5.8E+02
65	6.8E+02	1.1E+05	2.1E+02	6.8E+02	6.8E+03	6.8E+02
70	7.8E+02	1.3E+05	2.4E+02	7.8E+02	7.8E+03	7.8E+02
75	8.6E+02	1.4E+05	2.6E+02	8.6E+02	8.6E+03	8.6E+02
80	9.6E+02	1.6E+05	2.9E+02	9.6E+02	9.6E+03	9.6E+02
85	1.1E+03	1.8E+05	3.3E+02	1.1E+03	1.1E+04	1.1E+03
90	1.2E+03	2.0E+05	3.6E+02	1.2E+03	1.2E+04	1.2E+03
95	1.4E+03	2.3E+05	4.0E+02	1.4E+03	1.4E+04	1.4E+03
100	1.5E+03	2.6E+05	4.6E+02	1.5E+03	1.5E+04	1.5E+03
105	1.7E+03	2.8E+05	5.0E+02	1.7E+03	1.7E+04	1.7E+03
110	1.9E+03	3.2E+05	5.8E+02	1.9E+03	1.9E+04	1.9E+03
115	2.1E+03	3.6E+05	6.4E+02	2.1E+03	2.1E+04	2.1E+03
120	2.4E+03	4.0E+05	7.2E+02	2.4E+03	2.4E+04	2.4E+03

Table I-D.-Tier I and Tier II Feed Rate and Emissions Screening Limits for Carcinogenic Metals for Facilities in Noncomplex Terrain

	Values for Use in Urban Areas				Values for Use in Rural Areas			
Terrain-adjusted Eff. Stack Ht. (m)	Arsenic (g/hr)	Cadmium (g/hr)	Chromium (g/hr)	Beryllium (g/hr)	Arsenic (g/hr)	Cadmium (g/hr)	Chromium (g/hr)	Bery-llium (g/hr)
4	4.6E-01	1.1E+00	1.7E-01	8.2E-01	2.4E-01	5.8E-01	8.6E-02	4.3E-01
6	5.4E-01	1.3E+00	1.9E-01	9.4E-01	2.8E-01	6.6E-01	1.0E-01	5.0E-01
8	6.0E-01	1.4E+00	2.2E-01	1.1E+00	3.2E-01	7.6E-01	1.1E-01	5.6E-01
10	6.8E-01	1.6E+00	2.4E-01	1.2E+00	3.6E-01	8.6E-01	1.3E-01	6.4E-01
12	7.6E-01	1.8E+00	2.7E-01	1.4E+00	4.3E-01	1.1E+00	1.6E-01	7.8E-01
14	8.6E-01	2.1E+00	3.1E-01	1.5E+00	5.4E-01	1.3E+00	2.0E-01	9.6E-01

16	9.6E-01	2.3E+00	3.5E-01	1.7E+00	6.8E-01	1.6E+00	2.4E-01	1.2E+00
18	1.1E+00	2.6E+00	4.0E-01	2.0E+00	8.2E-01	2.0E+00	3.0E-01	1.5E+00
20	1.2E+00	3.0E+00	4.4E-01	2.2E+00	1.0E+00	2.5E+00	3.7E-01	1.9E+00
22	1.4E+00	3.4E+00	5.0E-01	2.5E+00	1.3E+00	3.2E+00	4.8E-01	2.4E+00
24	1.6E+00	3.9E+00	5.8E-01	2.8E+00	1.7E+00	4.0E+00	6.0E-01	3.0E+00
26	1.8E+00	4.3E+00	6.4E-01	3.2E+00	2.1E+00	5.0E+00	7.6E-01	3.9E+00
28	2.0E+00	4.8E+00	7.2E-01	3.6E+00	2.7E+00	6.4E+00	9.8E-01	5.0E+00
30	2.3E+00	5.4E+00	8.2E-01	4.0E+00	3.5E+00	8.2E+00	1.2E+00	6.2E+00
35	3.0E+00	6.8E+00	1.0E+00	5.4E+00	5.4E+00	1.3E+01	1.9E+00	9.6E+00
40	3.6E+00	9.0E+00	1.3E+00	6.8E+00	8.2E+00	2.0E+01	3.0E+00	1.5E+01
45	4.6E+00	1.1E+01	1.7E+00	8.6E+00	1.1E+01	2.8E+01	4.2E+00	2.1E+01
50	6.0E+00	1.4E+01	2.2E+00	1.1E+01	1.5E+01	3.7E+01	5.4E+00	2.8E+01
55	7.6E+00	1.8E+01	2.7E+00	1.4E+01	2.0E+01	5.0E+01	7.2E+00	3.6E+01
60	9.4E+00	2.2E+01	3.4E+00	1.7E+01	2.7E+01	6.4E+01	9.6E+00	4.8E+01
65	1.1E+01	2.8E+01	4.2E+00	2.1E+01	3.6E+01	8.6E+01	1.3E+01	6.4E+01
70	1.3E+01	3.1E+01	4.6E+00	2.4E+01	4.3E+01	1.0E+02	1.5E+01	7.6E+01
75	1.5E+01	3.6E+01	5.4E+00	2.7E+01	5.0E+01	1.2E+02	1.8E+01	9.0E+01
80	1.7E+01	4.0E+01	6.0E+00	3.0E+01	6.0E+01	1.4E+02	2.2E+01	1.1E+02
85	1.9E+01	4.6E+01	6.8E+00	3.4E+01	7.2E+01	1.7E+02	2.6E+01	1.3E+02
90	2.2E+01	5.0E+01	7.8E+00	3.9E+01	8.6E+01	2.0E+02	3.0E+01	1.5E+02
95	2.5E+01	5.8E+01	9.0E+00	4.4E+01	1.0E+02	2.4E+02	3.6E+01	1.8E+02

100	2.8E+01	6.8E+01	1.0E+01	5.0E+01	1.2E+02	2.9E+02	4.3E+01	2.2E+02
105	3.2E+01	7.6E+01	1.1E+01	5.6E+01	1.4E+02	3.4E+02	5.0E+01	2.6E+02
110	3.6E+01	8.6E+01	1.3E+01	6.4E+01	1.7E+02	4.0E+02	6.0E+01	3.0E+02
115	4.0E+01	9.6E+01	1.5E+01	7.2E+01	2.0E+02	4.8E+02	7.2E+01	3.6E+02
120	4.6E+01	1.1E+02	1.7E+01	8.2E+01	2.4E+02	5.8E+02	8.6E+01	4.3E+02

Table I-E.-Tier I and Tier II Feed Rate and Emissions Screening Limits for Carcinogenic Metals for Facilities in Complex Terrain

Values for Use in Urban and Rural Areas				
Terrain-adjusted Eff. Stack Ht. (m)	Arsenic (g/hr)	Cadmium (g/hr)	Chromium (g/hr)	Beryllium (g/hr)
4	1.1E-01	2.6E-01	4.0E-02	2.0E-01
6	1.6E-01	3.9E-01	5.8E-02	2.9E-01
8	2.4E-01	5.8E-01	8.6E-02	4.3E-01
10	3.5E-01	8.2E-01	1.3E-01	6.2E-01
12	4.3E-01	1.0E+00	1.5E-01	7.6E-01
14	5.0E-01	1.3E+00	1.9E-01	9.4E-01
16	6.0E-01	1.4E+00	2.2E-01	1.1E+00
18	6.8E-01	1.6E+00	2.4E-01	1.2E+00
20	7.6E-01	1.8E+00	2.7E-01	1.3E+00
22	8.2E-01	1.9E+00	3.0E-01	1.5E+00
24	9.0E-01	2.1E+00	3.3E-01	1.6E+00
26	1.0E+00	2.4E+00	3.6E-01	1.8E+00
28	1.1E+00	2.7E+00	4.0E-01	2.0E+00
30	1.2E+00	3.0E+00	4.4E-01	2.2E+00
35	1.5E+00	3.7E+00	5.4E-01	2.7E+00
40	1.9E+00	4.6E+00	6.8E-01	3.4E+00
45	2.4E+00	5.4E+00	8.4E-01	4.2E+00
50	2.9E+00	6.8E+00	1.0E+00	5.0E+00
55	3.5E+00	8.4E+00	1.3E+00	6.4E+00
60	4.3E+00	1.0E+01	1.5E+00	7.8E+00

65	5.4E+00	1.3E+01	1.9E+00	9.6E+00
70	6.0E+00	1.4E+01	2.2E+00	1.1E+01
75	6.8E+00	1.6E+01	2.4E+00	1.2E+01
80	7.6E+00	1.8E+01	2.7E+00	1.3E+01
85	8.2E+00	2.0E+01	3.0E+00	1.5E+01
90	9.4E+00	2.3E+01	3.4E+00	1.7E+01
95	1.0E+01	2.5E+01	4.0E+00	1.9E+01
100	1.2E+01	2.8E+01	4.3E+00	2.1E+01
105	1.3E+01	3.2E+01	4.8E+00	2.4E+01
110	1.5E+01	3.5E+01	5.4E+00	2.7E+01
115	1.7E+01	4.0E+01	6.0E+00	3.0E+01
120	1.9E+01	4.4E+01	6.4E+00	3.3E+01

Appendix II - Tier I Feed Rate Screening Limits for Total Chlorine [40 CFR 266 APPENDIX II]

Tier I Feed Rate Screening Limits for Total Chlorine

Terrain-adjusted Effective Stack Height (m)	Noncomplex Terrain		Complex Terrain
	Urban (g/hr)	Rural (g/hr)	(g/hr)
4	8.2E + 01	4.2E + 01	1.9E + 01
6	9.1E + 01	4.8E + 01	2.8E + 01
8	1.0E + 02	5.3E + 01	4.1E + 01
10	1.2E + 02	6.2E + 01	5.8E + 01
12	1.3E + 02	7.7E + 01	7.2E + 01
14	1.5E + 02	9.1E + 01	9.1E + 01
16	1.7E + 02	1.2E + 02	1.1E + 02
18	1.9E + 02	1.4E + 02	1.2E + 02
20	2.1E + 02	1.8E + 02	1.3E + 02
22	2.4E + 02	2.3E + 02	1.4E + 02
24	2.7E + 02	2.9E + 02	1.6E + 02
26	3.1E + 02	3.7E + 02	1.7E + 02
28	3.5E + 02	4.7E + 02	1.9E + 02
30	3.9E + 02	5.8E + 02	2.1E + 02
35	5.3E + 02	9.6E + 02	2.6E + 02
40	6.2E + 02	1.4E + 03	3.3E + 02
45	8.2E + 02	2.0E + 03	4.0E + 02
50	1.1E + 03	2.6E + 03	4.8E + 02
55	1.3E + 03	3.5E + 03	6.2E + 02
60	1.6E + 03	4.6E + 03	7.7E + 02
65	2.0E + 03	6.2E + 03	9.1E + 02
70	2.3E + 03	7.2E + 03	1.1E + 03
75	2.5E + 03	8.6E + 03	1.2E + 03
80	2.9E + 03	1.0E + 04	1.3E + 03
85	3.3E + 03	1.2E + 04	1.4E + 03
90	3.7E + 03	1.4E + 04	1.6E + 03
95	4.2E + 03	1.7E + 04	1.8E + 03
100	4.8E + 03	2.1E + 04	2.0E + 03

105	5.3E + 03	2.4E + 04	2.3E + 03
110	6.2E + 03	2.9E + 04	2.5E + 03
115	7.2E + 03	3.5E + 04	2.8E + 03
120	8.2E + 03	4.1E + 04	3.2E + 03

Appendix III - Tier II Emission Rate Screening Limits for Free Chlorine and Hydrogen Chloride [40 CFR 266 APPENDIX III]

Tier II Emission Rate Screening Limits for Free Chlorine and Hydrogen Chloride

Terrain-adjusted Effective Stack Height (m)	Noncomplex Terrain				Complex Terrain	
	Values for Urban Areas		Values for Rural Areas		Values for Use in Urban and Rural Areas	
	$C1_2$ (g/hr)	HC1 (g/hr)	$C1_2$ (g/hr)	HC1 (g/hr)	$C1_2$ (g/hr)	HC1 (g/hr)
4	8.2E + 01	1.4E + 03	4.2E + 01	7.3E + 02	1.9E + 01	3.3E + 02
6	9.1E + 01	1.6E + 03	4.8E + 01	8.3E + 02	2.8E + 01	4.9E + 02
8	1.0E + 02	1.8E + 03	5.3E + 01	9.2E + 02	4.1E + 01	7.1E + 02
10	1.2E + 02	2.0E + 03	6.2E + 01	1.1E + 03	5.8E + 01	1.0E + 03
12	1.3E + 02	2.3E + 03	7.7E + 01	1.3E + 03	7.2E + 01	1.3E + 03
14	1.5E + 02	2.6E + 03	9.1E + 01	1.6E + 03	9.1E + 01	1.6E + 03
16	1.7E + 02	2.9E + 03	1.2E + 02	2.0E + 03	1.1E + 02	1.8E + 03
18	1.9E + 02	3.3E + 03	1.4E + 02	2.5E + 03	1.2E + 02	2.0E + 03
20	2.1E + 02	3.7E + 03	1.8E + 02	3.1E + 03	1.3E + 02	2.3E + 03
22	2.4E + 02	4.2E + 03	2.3E + 02	3.9E + 03	1.4E + 02	2.4E + 03
24	2.7E + 02	4.8E + 03	2.9E + 02	5.0E + 03	1.6E + 02	2.8E + 03
26	3.1E + 02	5.4E + 03	3.7E + 02	6.5E + 03	1.7E + 02	3.0E + 03
28	3.5E + 02	6.0E + 03	4.7E + 02	8.1E + 03	1.9E + 02	3.4E + 03
30	3.9E + 02	6.9E + 03	5.8E + 02	1.0E + 04	2.1E + 02	3.7E + 03
35	5.3E + 02	9.2E + 03	9.6E + 02	1.7E + 04	2.6E + 02	4.6E + 03
40	6.2E + 02	1.1E + 04	1.4E + 03	2.5E + 04	3.3E + 02	5.7E + 03
45	8.2E + 02	1.4E + 04	2.0E + 03	3.5E + 04	4.0E + 02	7.0E + 03
50	1.1E + 03	1.8E + 04	2.6E + 03	4.6E + 04	4.8E + 02	8.4E + 03
55	1.3E + 03	2.3E + 04	3.5E + 03	6.1E + 04	6.2E + 02	1.1E + 04
60	1.6E + 03	2.9E + 04	4.6E + 03	8.1E + 04	7.7E + 02	1.3E + 04
65	2.0E + 03	3.4E + 04	6.2E + 03	1.1E + 05	9.1E + 02	1.6E + 04

70	2.3E + 03	3.9E + 04	7.2E + 03	1.3E + 05	1.1E + 03	1.8E + 04
75	2.5E + 03	4.5E + 04	8.6E + 03	1.5E + 05	1.2E + 03	2.0E + 04
80	2.9E + 03	5.0E + 04	1.0E + 04	1.8E + 05	1.3E + 03	2.3E + 04
85	3.3E + 03	5.8E + 04	1.2E + 04	2.2E + 05	1.4E + 03	2.5E + 04
90	3.7E + 03	6.6E + 04	1.4E + 04	2.5E + 05	1.6E + 03	2.9E + 04
95	4.2E + 03	7.4E + 04	1.7E + 04	3.0E + 05	1.8E + 03	3.2E + 04
100	4.8E + 03	8.4E + 04	2.1E + 04	3.6E + 05	2.0E + 03	3.5E + 04
105	5.3E + 03	9.2E + 04	2.4E + 04	4.3E + 05	2.3E + 03	3.9E + 04
110	6.2E + 03	1.1E + 05	2.9E + 04	5.1E + 05	2.5E + 03	4.5E + 04
115	7.2E + 03	1.3E + 05	3.5E + 04	6.1E + 05	2.8E + 03	5.0E + 04
120	8.2E + 03	1.4E + 05	4.1E + 04	7.2E + 05	3.2E + 03	5.6E + 04

Appendix IV - Reference Air Concentrations [40 CFR 266 APPENDIX IV]

Appendix IV-Reference Air Concentrations*

Constituent	CAS No.	RAC (ug/m^3)
Acetaldehyde	75-07-0	10
Acetonitrile	75-05-8	10
Acetophenone	98-86-2	100
Acrolein	107-02-8	20
Aldicarb	116-06-3	1
Aluminum Phosphide	20859-73-8	0.3
Allyl Alcohol	107-18-6	5
Antimony	7440-36-0	0.3
Barium	7440-39-3	50
Barium Cyanide	542-62-1	50
Bromomethane	74-83-9	0.8
Calcium Cyanide	592-01-8	30
Carbon Disulfide	75-15-0	200
Chloral	75-87-6	2
Chlorine (free)		0.4
2-Chloro-1,3-butadiene	126-99-8	3
Chromium III	16065-83-1	1000
Copper Cyanide	544-92-3	5
Cresols	1319-77-3	50

Cumene	98-82-8	1
Cyanide (free)	57-12-15	20
Cyanogen	460-19-5	30
Cyanogen Bromide	506-68-3	80
Di-n-butyl Phthalate	84-74-2	100
o-Dichlorobenzene	95-50-1	10
p-Dichlorobenzene	106-46-7	10
Dichlorodifluoromethane	75-71-8	200
2,4-Dichlorophenol	120-83-2	3
Diethyl Phthalate	84-66-2	800
Dimethoate	60-51-5	0.8
2,4-Dinitrophenol	51-28-5	2
Dinoseb	88-85-7	0.9
Diphenylamine	122-39-4	20
Endosulfan	115-29-1	0.05
Endrin	72-20-8	0.3
Fluorine	7782-41-4	50
Formic Acid	64-18-6	2000
Glycidyaldehyde	765-34-4	0.3
Hexachlorocyclopentadiene	77-47-4	5
Hexachlorophene	70-30-4	0.3
Hydrocyanic Acid	74-90-8	20
Hydrogen Chloride	7647-01-1	7
Hydrogen Sulfide	7783-06-4	3
Isobutyl Alcohol	78-83-1	300
Lead	7439-92-1	0.09
Maleic Anhydride	108-31-6	100
Mercury	7439-97-6	0.3
Methacrylonitrile	126-98-7	0.1
Methomyl	16752-77-5	20
Methoxychlor	72-43-5	50
Methyl Chlorocarbonate	79-22-1	1000
Methyl Ethyl Ketone	78-93-3	80
Methyl Parathion	298-00-0	0.3

Nickel Cyanide	557-19-7	20
Nitric Oxide	10102-43-9	100
Nitrobenzene	98-95-3	0.8
Pentachlorobenzene	608-93-5	0.8
Pentachlorophenol	87-86-5	30
Phenol	108-95-2	30
M-Phenylenediamine	108-45-2	5
Phenylmercuric Acetate	62-38-4	0.075
Phosphine	7803-51-2	0.3
Phthalic Anhydride	85-44-9	2000
Potassium Cyanide	151-50-8	50
Potassium Silver Cyanide	506-61-6	200
Pyridine	110-86-1	1
Selenious Acid	7783-60-8	3
Selenourea	630-10-4	5
Silver	7440-22-4	3
Silver Cyanide	506-64-9	100
Sodium Cyanide	143-33-9	30
Strychnine	57-24-9	0.3
1,2,4,5-Tetrachlorobenzene	95-94-3	0.3
2,3,4,6-Tetrachlorophenol	58-90-2	30
Tetraethyl Lead	78-00-2	0.0001
Tetrahydrofuran	109-99-9	10
Thallic Oxide	1314-32-5	0.3
Thallium	7440-28-0	0.5
Thallium (I) Acetate	563-68-8	0.5
Thallium (I) Carbonate	6533-73-9	0.3
Thallium (I) Chloride	7791-12-0	0.3
Thallium (I) Nitrate	10102-45-1	0.5
Thallium Selenite	12039-52-0	0.5
Thallium (I) Sulfate	7446-18-6	0.075
Thiram	137-26-8	5
Toluene	108-88-3	300
1,2,4-Trichlorobenzene	120-82-1	20

Trichloromonofluoromethane	75-69-4	300
2,4,5-Trichlorophenol	95-95-4	100
Vanadium Pentoxide	1314-62-1	20
Warfarin	81-81-2	0.3
Xylenes	1330-20-7	80
Zinc Cyanide	557-21-1	50
Zinc Phosphide	1314-84-7	0.3

FOOTNOTE: *The RAC for other Appendix VIII Rule 1200-01-11-.02(5) constituents not listed herein or in Appendix V of this Rule is 0.1 ug/m^3.

Appendix V - Risk Specific Doses [40 CFR 266 APPENDIX V]

Risk Specific Doses (10^{-5})

Constituent	CAS No.	Unit Risk (m^3/ug)	RsD (ug/m^3)
Acrylamide	79-06-1	1.3E-03	7.7E-03
Acrylonitrile	107-13-1	6.8E-05	1.5E-01
Aldrin	309-00-2	4.9E-03	2.0E-03
Aniline	62-53-3	7.4E-06	1.4E+00
Arsenic	7440-38-2	4.3E-03	2.3E-03
Benz(a)anthracene	56-55-3	8.9E-04	1.1E-02
Benzene	71-43-2	8.3E-06	1.2E+00
Benzidine	92-87-5	6.7E-02	1.5E-04
Benzo(a)pyrene	50-32-8	3.3E-03	3.0E-03
Beryllium	7440-41-7	2.4E-03	4.2E-03
Bis(2-chloroethyl)ether	111-44-4	3.3E-04	3.0E-02
Bis(chloromethyl)ether	542-88-1	6.2E-02	1.6E-04
Bis(2-ethylhexyl)-phthalate	117-81-7	2.4E-07	4.2E+01
1,3-Butadiene	106-99-0	2.8E-04	3.6E-02
Cadmium	7440-43-9	1.8E-03	5.6E-03
Carbon Tetrachloride	56-23-5	1.5E-05	6.7E-01
Chlordane	57-74-9	3.7E-04	2.7E-02
Chloroform	67-66-3	2.3E-05	4.3E-01
Chloromethane	74-87-3	3.6E-06	2.8E+00
Chromium VI	7440-47-3	1.2E-02	8.3E-04

DDT	50-29-3	9.7E-05	1.0E-01
Dibenz(a,h)anthracene	53-70-3	1.4E-02	7.1E-04
1,2-Dibromo-3-chloropropane	96-12-8	6.3E-03	1.6E-03
1,2-Dibromoethane	106-93-4	2.2E-04	4.5E-02
1,1-Dichloroethane	75-34-3	2.6E-05	3.8E-01
1,2-Dichloroethane	107-06-2	2.6E-05	3.8E-01
1,1-Dichloroethylene	75-35-4	5.0E-05	2.0E-01
1,3-Dichloropropene	542-75-6	3.5E-01	2.9E-05
Dieldrin	60-57-1	4.6E-03	2.2E-03
Diethylstilbestrol	56-53-1	1.4E-01	7.1E-05
Dimethylnitrosamine	62-75-9	1.4E-02	7.1E-04
2,4-Dinitrotoluene	121-14-2	8.8E-05	1.1E-01
1,2-Diphenylhydrazine	122-66-7	2.2E-04	4.5E-02
1,4-Dioxane	123-91-1	1.4E-06	7.1E+00
Epichlorohydrin	106-89-8	1.2E-06	8.3E+00
Ethylene Oxide	75-21-8	1.0E-04	1.0E-01
Ethylene Dibromide	106-93-4	2.2E-04	4.5E-02
Formaldehyde	50-00-0	1.3E-05	7.7E-01
Heptachlor	76-44-8	1.3E-03	7.7E-03
Heptachlor Epoxide	1024-57-3	2.6E-03	3.8E-03
Hexachlorobenzene	118-74-1	4.9E-04	2.0E-02
Hexachlorobutadiene	87-68-3	2.0E-05	5.0E-01
Alpha-hexachlorocyclo-hexane	319-84-6	1.8E-03	5.6E-03
Beta-hexachlorocyclohexane	319-85-7	5.3E-04	1.9E-02
Gamma-hexachlorocyclo-hexane	58-89-9	3.8E-04	2.6E-02
Hexachlorocyclohexane, Technical		5.1E-04	2.0E-02
Hexachlorodibenzo-p-dioxin(1,2 Mixture)		1.3E+0	7.7E-06
Hexachloroethane	67-72-1	4.0E-06	2.5E+00
Hydrazine	302-01-2	2.9E-03	3.4E-03
Hydrazine Sulfate	302-01-2	2.9E-03	3.4E-03

3-Methylcholanthrene	56-49-5	2.7E-03	3.7E-03
Methyl Hydrazine	60-34-4	3.1E-04	3.2E-02
Methylene Chloride	75-09-2	4.1E-06	2.4E+00
4,4'-Methylene-bis-2-chloroaniline	101-14-4	4.7E-05	2.1E-01
Nickel	7440-02-0	2.4E-04	4.2E-02
Nickel Refinery Dust	7440-02-0	2.4E-04	4.2E-02
Nickel Subsulfide	12035-72-2	4.8E-04	2.1E-02
2-Nitropropane	79-46-9	2.7E-02	3.7E-04
N-Nitroso-n-butylamine	924-16-3	1.6E-03	6.3E-03
N-Nitroso-n-methylurea	684-93-5	8.6E-02	1.2E-04
N-Nitrosodiethylamine	55-18-5	4.3E-02	2.3E-04
N-Nitrosopyrrolidine	930-55-2	6.1E-04	1.6E-02
Pentachloronitrobenzene	82-68-8	7.3E-05	1.4E-01
PCBs	1336-36-3	1.2E-03	8.3E-03
Pronamide	23950-58-5	4.6E-06	2.2E+00
Reserpine	50-55-5	3.0E-03	3.3E-03
2,3,7,8-Tetrachloro-dibenzo-p-dioxin	1746-01-6	4.5E+01	2.2E-07
1,1,2,2-Tetrachloroethane	79-34-5	5.8E-05	1.7E-01
Tetrachloroethylene	127-18-4	4.8E-07	2.1E+01
Thiourea	62-56-6	5.5E-04	1.8E-02
1,1,2-Trichloroethane	79-00-5	1.6E-05	6.3E-01
Trichloroethylene	79-01-6	1.3E-06	7.7E+00
2,4,6-Trichlorophenol	88-06-2	5.7E-06	1.8E+00
Toxaphene	8001-35-2	3.2E-04	3.1E-02
Vinyl Chloride	75-01-4	7.1E-06	1.4E+00

Appendix VI-Stack Plume Rise [40 CFR 266 APPENDIX VI]

[Estimated Plume Rise (in Meters) Based on Stack Exit Flow Rate and Gas Temperature]

Flow rate (m^3/s)	Exhaust Temperature (K°)										
	<325	325-349	350-399	400-449	450-499	500-599	600-699	700-799	800-999	1000-1499	>1499
<0.5	0	0	0	0	0	0	0	0	0	0	0
0.5-	0	0	0	0	0	0	0	0	1	1	1

0.9											
1.0-1.9	0	0	0	0	1	1	2	3	3	3	4
2.0-2.9	0	0	1	3	4	4	6	6	7	8	9
3.0-3.9	0	1	2	5	6	7	9	10	11	12	13
4.0-4.9	1	2	4	6	8	10	12	13	14	15	17
5.0-7.4	2	3	5	8	10	12	14	16	17	19	21
7.5-9.9	3	5	8	12	15	17	20	22	22	23	24
10.0-12.4	4	6	10	15	19	21	23	24	25	26	27
12.5-14.9	4	7	12	18	22	23	25	26	27	28	29
15.0-19.9	5	8	13	20	23	24	26	27	28	29	31
20.0-24.9	6	10	17	23	25	27	29	30	31	32	34
25.0-29.9	7	12	20	25	27	29	31	32	33	35	36
30.0-34.9	8	14	22	26	29	31	33	35	36	37	39
35.0-39.9	9	16	23	28	30	32	35	36	37	39	41
40.0-49.9	10	17	24	29	32	34	36	38	39	41	42
50.0-59.9	12	21	26	31	34	36	39	41	42	44	46
60.0-69.9	14	22	27	33	36	39	42	43	45	47	49
70.0-79.9	16	23	29	35	38	41	44	46	47	49	51
80.0-89.9	17	25	30	36	40	42	46	48	49	51	54
90.0-99.9	19	26	31	38	42	44	48	50	51	53	56
100.0-119.9	21	26	32	39	43	46	49	52	53	55	58

120.0 - 139.9	22	28	35	42	46	49	52	55	56	59	61
140.0 - 159.9	23	30	36	44	48	51	55	58	59	62	65
160.0 - 179.9	25	31	38	46	50	54	58	60	62	65	67
180.0 - 199.9	26	32	40	48	52	56	60	63	65	67	70
>199.9	26	33	41	49	54	58	62	65	67	69	73

Appendix VII-Health-Based Limits for Exclusion of Waste-derived Residues* [40 CFR 266 APPENDIX VII]

Metals-TCLP Extract Concentration Limits

Constituent	CAS No.	Concentration Limits (mg/L)
Antimony	7440-36-0	1xE+00
Arsenic	7440-38-2	5xE+00
Barium	7440-39-3	1xE+02
Beryllium	7440-41-7	7xE-03
Cadmium	7440-43-9	1xE+00
Chromium	7440-47-3	5xE+00
Lead	7439-92-1	5xE+00
Mercury	7439-97-6	2xE-01
Nickel	7440-02-0	7xE+01
Selenium	7782-49-2	1xE+00
Silver	7440-22-4	5xE+00
Thallium	7440-28-0	7xE+00

Nonmetals-Residue Concentration Limits

Constituent	CAS No.	Concentration Limits for Residues (mg/kg)
Acetonitrile	75-05-8	2xE-01
Acetophenone	98-86-2	4xE+00
Acrolein	107-02-8	5xE-01

Acrylamide	79-06-1	2xE-04
Acrylonitrile	107-13-1	7xE-04
Aldrin	309-00-2	2xE-05
Allyl alcohol	107-18-6	2xE-01
Aluminum phosphide	20859-73-8	1xE-02
Aniline	62-53-3	6xE-02
Barium cyanide	542-62-1	1xE+00
Benz(a)anthracene	56-55-3	1xE-04
Benzene	71-43-2	5xE-03
Benzidine	92-87-5	1xE-06
Bis(2-chloroethyl) ether	111-44-4	3xE-04
Bis(chloromethyl) ether	542-88-1	2xE-06
Bis(2-ethylhexyl) phthalate	117-81-7	3xE+01
Bromoform	75-25-2	7xE-01
Calcium cyanide	592-01-8	1xE-06
Carbon disulfide	75-15-0	4xE+00
Carbon tetrachloride	56-23-5	5xE-03
Chlordane	57-74-9	3xE-04
Chlorobenzene	108-90-7	1xE+00
Chloroform	67-66-3	6xE-02
Copper cyanide	544-92-3	2xE-01
Cresols (Cresylic acid)	1319-77-3	2xE+00
Cyanogen	460-19-5	1xE+00
DDT	50-29-3	1xE-03
Dibenz(a, h)-anthracene	53-70-3	7xE-06
1,2-Dibromo-3-chloropropane	96-12-8	2xE-05
p-Dichlorobenzene	106-46-7	7.5xE-02
Dichlorodifluoromethane	75-71-8	7xE+00
1,1-Dichloroethylene	75-35-4	5xE-03
2,4-Dichlorophenol	120-83-2	1xE-01
1,3-Dichloropropene	542-75-6	1xE-03
Dieldrin	60-57-1	2xE-05
Diethyl phthalate	84-66-2	3xE+01
Diethylstilbesterol	56-53-1	7xE-07

Dimethoate	60-51-5	3xE-02
2,4-Dinitrotoluene	121-14-2	5xE-04
Diphenylamine	122-39-4	9xE-01
1,2-Diphenylhydrazine	122-66-7	5xE-04
Endosulfan	115-29-7	2xE-03
Endrin	72-20-8	2xE-04
Epichlorohydrin	106-89-8	4xE-02
Ethylene dibromide	106-93-4	4xE-07
Ethylene oxide	75-21-8	3xE-04
Fluorine	7782-41-4	4xE+00
Formic acid	64-18-6	7xE+01
Heptachlor	76-44-8	8xE-05
Heptachlor epoxide	1024-57-3	4xE-05
Hexachlorobenzene	118-74-1	2xE-04
Hexachlorobutadiene	87-68-3	5xE-03
Hexachlorocyclopentadiene	77-47-4	2xE-01
Hexachlorodibenzo-p-dioxins	19408-74-3	6xE-08
Hexachloroethane	67-72-1	3xE-02
Hydrazine	302-01-1	1xE-04
Hydrogen cyanide	74-90-8	7xE-05
Hydrogen sulfide	7783-06-4	1xE-06
Isobutyl alcohol	78-83-1	1xE+01
Methomyl	16752-77-5	1xE+00
Methoxychlor	72-43-5	1xE-01
3-Methylcholanthrene	56-49-5	4xE-05
4,4'-Methylenebis (2-chloroaniline)	101-14-4	2xE-03
Methylene chloride	75-09-2	5xE-02
Methyl ethyl ketone (MEK)	78-93-3	2xE+00
Methyl hydrazine	60-34-4	3xE-04
Methyl parathion	298-00-0	2xE-02
Naphthalene	91-20-3	1xE+01
Nickel cyanide	557-19-7	7xE-01
Nitric oxide	10102-43-9	4xE+00
Nitrobenzene	98-95-3	2xE-02

N-Nitrosodi-n-butylamine	924-16-3	6xE-05
N-Nitrosodiethylamine	55-18-5	2xE-06
N-Nitroso-N-methylurea	684-93-5	1xE-07
N-Nitrosopyrrolidine	930-55-2	2xE-04
Pentachlorobenzene	608-93-5	3xE-02
Pentachloronitrobenzene (PCNB)	82-68-8	1xE-01
Pentachlorophenol	87-86-5	1xE+00
Phenol	108-95-2	1xE+00
Phenylmercury acetate	62-38-4	3xE-03
Phosphine	7803-51-2	1xE-02
Polychlorinated biphenyls, N.O.S	1336-36-3	5xE-05
Potassium cyanide	151-50-8	2xE+00
Potassium silver cyanide	506-61-6	7xE+00
Pronamide	23950-58-5	3xE+00
Pyridine	110-86-1	4xE-02
Reserpine	50-55-5	3xE-05
Selenourea	630-10-4	2xE-01
Silver cyanide	506-64-9	4xE+00
Sodium cyanide	143-33-9	1xE+00
Strychnine	57-24-9	1xE-02
1,2,4,5-Tetrachlorobenzene	95-94-3	1xE-02
1,1,2,2-tetrachloroethane	79-34-5	2xE-03
Tetrachloroethylene	127-18-4	7xE-01
2,3,4,6-Tetrachlorophenol	58-90-2	1xE-02
Tetraethyl lead	78-00-2	4xE-06
Thiourea	62-56-6	2xE-04
Toluene	108-88-3	1xE+01
Toxaphene	8001-35-2	5xE-03
1,1,2-Trichloroethane	79-00-5	6xE-03
Trichloroethylene	79-01-6	5xE-03
Trichloromonofluoromethane	75-69-4	1xE+01
2,4,5-Trichlorophenol	95-95-4	4xE+00
2,4,6-Trichlorophenol	88-06-2	4xE+00
Vanadium pentoxide	1314-62-1	7xE-01

Vinyl chloride	75-01-4	2xE-03

*Note 1: The health-based concentration limits for Appendix VIII of Rule 1200-01-11-.02(5) constituents for which a health-based concentration is not provided below is 2xE-06 mg/kg.
Note 2: The levels specified in this appendix and the default level of 0.002 micrograms per kilogram or the level of detection for constituents as identified in Note 1 of this appendix are administratively stayed under the condition, for those constituents specified in subpart (8)(m)2(i) of this Rule, that the owner or operator complies with alternative levels defined as the land disposal restriction limits specified in Rule 1200-01-11-.10(3)(d) for F039 nonwastewaters. See item (8)(m)2(ii)(I) of this Rule.

Appendix VIII-Organic Compounds For Which Residues Must Be Analyzed [40 CFR 266 APPENDIX VIII]

Volatiles	Semivolatiles
Benzene	Bis(2-ethylhexyl)phthalate
Toluene	Naphthalene
Carbon tetrachloride	Phenol
Chloroform	Diethyl phthalate
Methylene chloride	Butyl benzyl phthalate
Trichloroethylene	2,4-Dimethylphenol
Tetrachloroethylene	o-Dichlorobenzene
1,1,1-Trichloroethane	m-Dichlorobenzene
Chlorobenzene	p-Dichlorobenzene
cis-1,4-Dichloro-2-butene	Hexachlorobenzene
Bromochloromethane	2,4,6-Trichlorophenol
Bromodichloromethane	Fluoranthene
Bromoform	o-Nitrophenol
Bromomethane	1,2,4-Trichlorobenzene
Methylene bromide	o-Chlorophenol
Methyl ethyl ketone	Pentachlorophenol Pyrene Dimethyl phthalate Mononitrobenzene 2,6-Toluene diisocyanate Polychlorinated dibenzo-p-dioxins[1] Polychlorinated dibenzo-furans[1]

[1] Analyses for polychlorinated dibenso-p-dioxins and polychlorinated dibenzo-furans are required only for residues collected from areas downstream of the combustion chamber (e.g., ductwork, boiler tubes, heat exchange surfaces, air pollution control devices, etc.).

NOTE TO THE TABLE: Analysis is not required for those compounds that do not have an established F039 nonwastewater concentration limit.

Appendix IX - Methods Manual for Compliance With the BIF Regulations

The Methods Manual for Compliance with the BIF Regulations presents required methods for demonstrating compliance with Tennessee's Hazardous Waste Regulations for boilers and industrial furnaces (BIFs) burning hazardous waste.

(Note: A copy of this Methods Manual may be obtained by contacting the Division Director at the following address:

Division Director
Division of Solid Waste Management
Tennessee Department of Environment
and Conservation
L & C Tower, 5th Floor
401 Church Street
Nashville, Tennessee 37243-1535

or calling 615-532-0780. The Methods Manual may also be found at 40 CFR 266 Appendix IX.)

Appendix X - (RESERVED)

Appendix XI - Lead-Bearing Materials That May Be Processed in Exempt Lead Smelters [40 CFR 266 APPENDIX XI]

A. Exempt Lead-Bearing Materials When Generated or Originally Produced By Lead-Associated Industries:
Acid dump/fill solids
Sump mud
Materials from laboratory analyses
Acid filters
Baghouse bags
Clothing (e.g., coveralls, aprons, shoes, hats, gloves)
Sweepings
Air filter bags and cartridges
Respiratory cartridge filters
Shop abrasives
Stacking boards
Waste shipping containers (e.g., cartons, bags, drums, cardboard)
Paper hand towels
Wiping rags and sponges
Contaminated pallets
Water treatment sludges, filter cakes, residues, and solids
Emission control dusts, sludges, filter cakes, residues, and solids from lead-associated industries (e.g., K069 and D008 wastes)
Spent grids, posts, and separators
Spent batteries
Lead oxide and lead oxide residues
Lead plates and groups
Spent battery cases, covers, and vents
Pasting belts
Water filter media
Cheesecloth from pasting rollers
Pasting additive bags

Asphalt paving materials

B. Exempt Lead-Bearing Materials When Generated or Originally Produced By Any Industry

Charging jumpers and clips
Platen abrasive
Fluff from lead wire and cable casings
Lead-based pigments and compounding pigment dust

Appendix XII -Nickel or Chromium-bearing Material That May Be Processed in Exempt Nickel-chromium Recovery Furnaces [40 CFR 266 APPENDIX XII]

A. Exempt Nickel or Chromium-Bearing Materials when Generated by Manufacturers or Users of Nickel, Chromium, or Iron

Baghouse bags
Raney nickel catalyst
Floor sweepings
Air filters
Electroplating bath filters
Wastewater filter media
Wood pallets
Disposable clothing (coveralls, aprons, hats, and gloves)
Laboratory samples and spent chemicals
Shipping containers and plastic liners from containers or vehicles used to transport nickel or chromium-containing wastes
Respirator cartridge filters
Paper hand towels

B. Exempt Nickel or Chromium-Bearing Materials when Generated by Any Industry

Electroplating wastewater treatment sludges (F006)
Nickel and/or chromium-coating solutions
Nickel, chromium, and iron catalysts
Nickel-cadmium and nickel-iron batteries
Filter cake from wet scrubber system water treatment plants in the specialty steel industry
Filter cake from nickel-chromium alloy pickling operations

Appendix XIII -Mercury Bearing Wastes That May Be Processed in Exempt Mercury Recovery Units [40 CFR 266 APPENDIX XIII]

These are exempt mercury-bearing materials with less than 500 ppm of Rule 1200-01-11-.02(5), Appendix VIII organic constituents when generated by manufacturers or users of mercury or mercury products.

1. Activated carbon
2. Decomposer graphite
3. Wood
4. Paper
5. Protective clothing
6. Sweepings
7. Respiratory cartridge filters
8. Cleanup articles
9. Plastic bags and other contaminated containers

10. Laboratory and process control samples
11. K106 and other wastewater treatment plant sludge and filter cake
12. Mercury cell sump and tank sludge
13. Mercury cell process solids
14. Recoverable levels of mercury contained in soil

Authority: T.C.A. §§4-5-202 and 68-212-101 et seq.

1200-01-11-.10 Land Disposal Restrictions

(1) General

(a) Purpose, Scope and Applicability [40 CFR 268.1]

1. This Rule identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances under which an otherwise prohibited waste may continue to be land disposed.

2. Except as specifically provided otherwise in this Rule 1200-01-11-.02, the requirements of this Rule apply to persons who generate or transport hazardous waste and owners and operators of hazardous waste treatment, storage, and disposal facilities.

3. Restricted wastes may continue to be land disposed as follows:

(i) Where persons have been granted an extension to the effective date of a prohibition under paragraph (2) of this Rule or pursuant to subparagraph (1)(e) of this Rule with respect to those wastes covered by the extension;

(ii) Where persons have been granted an exemption from a prohibition pursuant to a petition under subparagraph (1)(f) of this Rule, with respect to those wastes and units covered by the petition;

(iii) Wastes that are hazardous only because they exhibit a hazardous characteristic, and which are otherwise prohibited under this Rule, or 40 CFR 148, are not prohibited if the wastes:

(I) Are disposed into a nonhazardous or hazardous injection well as defined in Tennessee' s Underground Injection Control Program, Rule Chapter 1200-4-6 [40 CFR 146.6(a)]; and

(II) Do not exhibit any prohibited characteristic of hazardous waste identified in Rule 1200-01-11-.02(3) at the point of injection; and

(iv) Wastes that are hazardous only because they exhibit a hazardous characteristic, and which are otherwise prohibited under this Rule, are not prohibited if the wastes meet any of the following criteria, unless the wastes are subject to a specified method of treatment other than DEACT in subparagraph (3)(a) of this Rule, or are D003 reactive cyanide:

(I) The wastes are managed in a treatment system which subsequently discharges to waters of the U.S. pursuant to a permit issued under section 402 of the Clean Water Act; or

(II) The wastes are treated for purposes of the pretreatment requirements of section 307 of the Clean Water Act; or

(III) The wastes are managed in a zero discharge system engaged in Clean Water Act-equivalent treatment as defined in part (2)(h)1 of this Rule; or

(IV) The wastes no longer exhibit a prohibited characteristic at the point of land disposal (i.e., placement in a surface impoundment).

4. The requirements of this Rule shall not affect the availability of a waiver under section 121(d)(4) of the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).

5. The following hazardous wastes are not subject to any provision of this Rule:

(i) Waste generated by small quantity generators of less than 100 kilograms of non-acute hazardous waste or less than 1 kilogram of acute hazardous waste per month, as defined in Rule 1200-01-11-.02(1)(e);

(ii) Waste pesticides that a farmer disposes of pursuant to Rule 1200-01-11-.03(1)(a)7;

(iii) Wastes identified or listed as hazardous after November 8, 1984 for which Tennessee has not promulgated land disposal prohibitions or treatment standards; or

(iv) De minimis losses of characteristic wastes to wastewaters are not considered to be prohibited wastes and are defined as losses 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; and relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; rinsate from empty containers or from containers that are rendered empty by that rinsing; and laboratory wastes not exceeding one per cent of the total flow of wastewater into the facility' s headworks on an annual basis, or with a combined annualized average concentration not exceeding one part per million in the headworks of the facility' s wastewater treatment or pretreatment facility.

6. Universal waste handlers and universal waste transporters (as defined in Rule 1200-01-11-.01(2)(a)) are exempt from subparagraphs (1)(g) and (4)(a) of this Rule for the hazardous wastes listed in Rule 1200-01-11-.12(1)(a). These handlers are subject to regulation under Rule 1200-01-11-.12.

(b) Definitions Applicable in this Rule [40 CFR 268.2]

When used in this Rule the following terms have the meanings given below:

1. "Debris" means solid material exceeding a 60 mm particle size that is intended for disposal and that is: a manufactured object; or plant or animal matter; or natural geologic material. However, the following materials are not debris: any

material for which a specific treatment standard is provided in paragraph (3) of this Rule, namely lead acid batteries, cadmium batteries, and radioactive lead solids; process residuals such as smelter slag and residues from the treatment of waste, wastewater, sludges, or air emission residues; and intact containers of hazardous waste that are not ruptured and that retain at least 75% of their original volume. A mixture of debris that has not been treated to the standards provided by subparagraph (3)(f) of this Rule and other material is subject to regulation as debris if the mixture is comprised primarily of debris, by volume, based on visual inspection.

2. "Halogenated organic compounds" or "HOCs" means those compounds having a carbon-halogen bond which are listed under Appendix III of paragraph (5) of this Rule.

3. "Hazardous constituent or constituents" means those constituents listed in Appendix VIII to Rule 1200-01-11-.02(5).

4. "Hazardous debris" means debris that contains a hazardous waste listed in Rule 1200-01-11-.02(4), or that exhibits a characteristic of hazardous waste identified in Rule 1200-01-11-.02(3). Any deliberate mixing of prohibited hazardous waste with debris that changes its treatment classification (i.e., from waste to hazardous debris) is not allowed under the dilution prohibition in subparagraph (1)(c) of this Rule.

5. " Inorganic metal-bearing waste" is one for which the Department established treatment standards for metal hazardous constituents, and which does not otherwise contain significant organic or cyanide content as described in subpart (c)3(i) of this paragraph, and is specifically listed in Appendix XI of this Rule.

6. "Land disposal" means placement in or on the land, except in a corrective action management unit or staging pile, and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, underground mine or cave, or placement in a concrete vault, or bunker intended for disposal purposes.

7. "Nonwastewaters" are wastes that do not meet the criteria for wastewaters in part (1)(b)11 of this Rule.

8. "Polychlorinated biphenyls" or "PCBs" are halogenated organic compounds defined in accordance with 40 CFR 761.3.

9. " Soil" means unconsolidated earth material composing the superficial geologic strata (material overlying bedrock), consisting of clay, silt, sand, or gravel size particles as classified by the U.S. Natural Resources Conservation Service, or a mixture of such materials with liquids, sludges or solids which is inseparable by simple mechanical removal processes and is made up primarily of soil by volume based on visual inspection. Any deliberate mixing of prohibited hazardous waste with soil that changes its treatment classification (i.e., from waste to contaminated soil) is not allowed under the dilution prohibition in subparagraph (1)(c) of this Rule.

10. " Underlying hazardous constituent" means any constituent listed in subparagraph (3)(i) of this Rule, Table UTS-Universal Treatment Standards,

except fluoride, selenium, sulfides, vanadium and zinc, which can reasonably be expected to be present at the point of generation of the hazardous waste at a concentration above the constituent-specific UTS treatment standards.

11. " Wastewaters" are wastes that contain less than 1% by weight total organic carbon (TOC) and less that 1% by weight total suspended solids (TSS).

12. All other terms have the meanings given under Rules 1200-01-11-.01(2)(a), .02(1)(b), or .02(1)(c).

(c) Dilution prohibited as a Substitute for Treatment [40 CFR 268.3]

1. Except as provided in part 2 of this subparagraph, no generator, transporter, handler, or owner or operator of a treatment, storage, or disposal facility shall in any way dilute a restricted waste or the residual from treatment of a restricted waste as a substitute for adequate treatment to achieve compliance with paragraph (3) of this Rule, to circumvent the effective date of a prohibition in paragraph (2) of this Rule, to otherwise avoid a prohibition in paragraph (2) of this Rule, or to circumvent a land disposal prohibition imposed by T.C.A. §68-212-107(d)9.

2. Dilution of wastes that are hazardous only because they exhibit a characteristic in treatment systems which include land-based units which treat wastes subsequently discharged to a water of the United States pursuant to a permit issued under section 402 of the Clean Water Act (CWA), or which treat wastes in a CWA-equivalent treatment system, or which treat wastes for the purposes of pretreatment requirements under section 307 of the CWA is not impermissible dilution for purposes of this subparagraph unless a method other than DEACT has been specified in subparagraph (3)(a) of this Rule as the treatment standard, or unless the waste is a D003 reactive cyanide wastewater or nonwastewater.

3. Combustion of the hazardous waste codes listed in Appendix XI of this Rule is prohibited, unless the waste, at the point of generation, or after any bona fide treatment such as cyanide destruction prior to combustion, can be demonstrated to comply with one or more of the following criteria (unless otherwise specifically prohibited from combustion):

(i) The waste contains hazardous organic constituents or cyanide at levels exceeding the constituent-specific treatment standard found in subparagraph (3)(i) of this Rule;

(ii) The waste consists of organic, debris-like materials (e.g., wood, paper, plastic, or cloth) contaminated with an inorganic metal-bearing hazardous waste;

(iii) The waste, at point of generation, has reasonable heating value such as greater than or equal to 5000 BTU per pound;

(iv) The waste is co-generated with wastes for which combustion is a required method of treatment;

(v) The waste is subject to State and/or Federal requirements necessitating reduction of organics (including biological agents); or

(vi) The waste contains greater than 1% Total Organic Carbon (TOC).

4. It is a form of impermissible dilution, and therefore prohibited, to add iron filings or other metallic forms of iron to lead-containing hazardous wastes in order to achieve any land disposal restriction treatment standard for lead. Lead-containing wastes include D008 wastes (wastes exhibiting a characteristic due to the presence of lead), all characteristic wastes containing lead as an underlying hazardous constituent, listed wastes containing lead as a regulated constituent, and hazardous media containing any of the aforementioned lead-containing wastes.

(d) Treatment Surface Impoundment Exemption [40 CFR 268.4]

1. Wastes which are otherwise prohibited from land disposal under this Rule may be treated in a surface impoundment or series of impoundments provided that:

(i) Treatment of such wastes occurs in the impoundments;

(ii) The following conditions are met:

(I) Sampling and testing

For wastes with treatment standards in paragraph (3) of this Rule and/or prohibition levels in paragraph (2) of this Rule or federal RCRA section 3004(d), the residues from treatment are analyzed, as specified in subparagraph (1)(g) of this Rule or subparagraph (2)(c) of this Rule, to determine if they meet the applicable treatment standards or where no treatment standards have been established for the waste, the applicable prohibition levels. The sampling method, specified in the waste analysis plan under Rule 1200-01-11-.05(2)(d) or .06(2)(d), must be designed such that representative samples of the sludge and the supernatant are tested separately rather than mixed to form homogeneous samples.

(II) Removal

The following treatment residues (including any liquid waste) must be removed at least annually: residues which do not meet the treatment standards promulgated under paragraph (3) of this Rule; residues which do not meet the prohibition levels established under paragraph (2) of this Rule or imposed by statute (where no treatment standards have been established); residues which are from the treatment of wastes prohibited from land disposal under paragraph (2) of this Rule (where no treatment standards have been established and no prohibition levels apply); or residues from managing listed wastes which are not delisted under Rule 1200-01-11-.01(3)(c). If the volume of liquid flowing through the impoundment or series of impoundments annually is greater than the volume of the impoundment or impoundments, this flow-through constitutes removal of the supernatant for the purpose of this requirement.

(III) Subsequent management

Treatment residues may not be placed in any other surface impoundment for subsequent management.

(IV) Recordkeeping

Sampling and testing and recordkeeping provisions of Rules 1200-01-11-.06(2)(d) and .05(2)(d);

(iii) The impoundment meets the design requirements of Rule 1200-01-11-.05(11)(b)1 or .06(11)(b)3, regardless that the unit may not be new, expanded, or a replacement, and be in compliance with applicable ground water monitoring requirements of Rules 1200-01-11-.05(6) or .06(6) unless:

(I) Exempted pursuant to Rule 1200-01-11-.06(11)(b)4 or 5 or to Rule 1200-01-11-.05(11)(b)3 or 4; or

(II) Upon application by the owner or operator, the Commissioner, after notice has been given by the owner or operator, as provided for in Rule 1200-01-11-.07(7)(e) and as prepared and required by the Commissioner (the owner or operator has provided proof of the completion of all notice requirements to the Commissioner within ten (10) days following conclusion of the public notice procedures), and an opportunity to comment, has granted a waiver of the requirements on the basis that the surface impoundment:

I. Has at least one liner, for which there is no evidence that such liner is leaking;

II. Is located more than one-quarter mile from an underground source of drinking water; and

III. Is in compliance with generally applicable ground water monitoring requirements for facilities with permits; or

(III) Upon application by the owner or operator, the Commissioner, after public notice as set forth in item (II) of this subpart, and an opportunity to comment, has granted a modification to the requirements on the basis of a demonstration that the surface impoundment 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; and

(iv) The owner or operator submits to the Commissioner a written certification that the requirements of subpart (d)1(iii) of this paragraph have been met. The following certification is required:

" I certify under penalty of law that the requirements of Rule 1200-01-11-.10(1)(d)1(iii) have been met for all surface impoundments being used to treat restricted wastes. 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. Evaporation of hazardous constituents as the principal means of treatment is not considered to be treatment for purposes of an exemption under this subparagraph.

(e) (Reserved) [40 CFR 268.5]

(Note: The authority for implementing 40 CFR 268.5 Procedures for Case-by-Case Extensions to an Effective Date remains with the U.S. Environmental Protection Agency.)

(f) (Reserved) [40 CFR 268.6]

(Note: 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.)

(g) Testing, Tracking, and Recordkeeping Requirements for Generators, Treaters, and Disposal Facilities [40 CFR 268.7]

1. Requirements for generators:

(i) A generator of hazardous waste must determine if the waste has to be treated before it can be land disposed. This is done by determining if the hazardous waste meets the treatment standards in subparagraphs (3)(a), (3)(f), or (3)(j) of this Rule. This determination can be made concurrently with the hazardous waste determination required in Rule 1200-01-11-.03(1)(b), in either of two ways: testing the waste or using knowledge of the waste. If the generator tests the waste, testing would normally determine the total concentration of hazardous constituents, or the concentration of hazardous constituents in an extract of the waste obtained using test method 1311 in ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW-846, listed in Rule 1200-01-11-.01(2)(b), depending on whether the treatment standard for the waste is expressed as a total concentration or concentration of hazardous constituent in the waste's extract. (Alternatively, the generator must send the waste to a RCRA-permitted hazardous waste treatment facility, where the waste treatment facility must comply with the requirements of subparagraph (2)(d) of Rule 1200-01-11-.06 and part 2 of this subparagraph.) In addition, some hazardous wastes must be treated by particular treatment methods before they can be land disposed and some soils are contaminated by such hazardous wastes. These treatment standards are also found in subparagraph (3)(a) of this Rule, and are described in detail in subparagraph (3)(c) of this Rule, Table 1. These wastes, and soils contaminated with such wastes, do not need to be tested (however, if they are in a waste mixture, other wastes with concentration level treatment standards would have to be tested). If a generator determines they are managing a waste, or soil contaminated with a waste, that displays a hazardous characteristic of ignitability, corrosivity, reactivity, or toxicity, they must comply with the special requirements of subparagraph (1)(i) of this Rule in addition to any applicable requirements in this subparagraph.

(ii) If the waste or contaminated soil does not meet the treatment standards or if the generator chooses not to make the determination of whether this must be treated, with the initial shipment of waste to each treatment or storage facility, the generator must send a one-time written notice to each treatment or storage facility receiving the waste, and place a copy in the file. The notice must include the information in column " .10(1)(g)1(ii)" of the Generator Paperwork Requirements Table in subpart (iv) of this part (Alternatively, if the generator chooses not to make the determination of whether the waste must be treated, the notification must include the Hazardous Waste Codes and Manifest Number of the first shipment and must state " This hazardous waste may or may not be subject to the LDR treatment standards. The treatment facility must make the determination.") No further notification is necessary until such time that the waste or facility change, in which case a new notification must be sent and a copy placed in the generator's file.

(I) For contaminated soil, the following certification statement should be included, signed by an authorized representative:

" I certify under penalty of law that I personally have examined this contaminated soil and it [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and requires treatment to meet the soil treatment standards as provided by Rule 1200-01-11-.10(3)(j)3."

(II) (RESERVED)

(iii) If the waste or contaminated soil meets the treatment standard at the original point of generation:

(I) With the initial shipment of waste to each treatment, storage, or disposal facility, the generator must send a one-time written notice to each treatment, storage, or disposal facility receiving the waste, and place a copy in the file. The notice must include the information indicated in column " .10(1)(g)1(iii)" of the Generator Paperwork Requirements Table in .10(1)(g)1(iv) and the following certification statement, signed by an authorized representative:

" I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in Rule 1200-01-11-.10(3). I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment."

(II) For contaminated soil, with the initial shipment of wastes to each treatment, storage, or disposal facility, the generator must send a one-time written notice to each facility receiving the waste and place a copy in the file. The notice must include the information in column .10(1)(g)1(iii) of the Generator Paperwork Requirements Table in subpart (iv) of this part.

(III) If the waste changes, the generator must send a new notice and certification to the receiving facility, and place a copy in their files. Generators of hazardous debris excluded from the

definition of hazardous waste under part (1)(c)6 of Rule 1200-01-11-.02 are not subject to these requirements.

(iv) For reporting, tracking and recordkeeping when exceptions allow certain wastes or contaminated soil that do not meet the treatment standards to be land disposed: There are certain exemptions from the requirement that hazardous wastes or contaminated soil meet treatment standards before they can be land disposed. These include, but are not limited to case-by-case extensions under subparagraph (e) of this paragraph, disposal in a no-migration unit under subparagraph (f) of this paragraph, or a national capacity variance or case-by-case capacity variance under paragraph (2) of this Rule. If a generator's waste is so exempt, then with the initial shipment of waste, the generator must send a one-time written notice to each land disposal facility receiving the waste. The notice must include the information indicated in column " .10(1)(g)1(iv)" of the Generator Paperwork Requirements Table below. If the waste changes, the generator must send a new notice to the receiving facility, and place a copy in their files.

Generator Paperwork Requirements Table

Required information	.10(1)(g)1(ii)	.10(1)(g)1(iii)	.10(1)(g)1(iv)	.10(1)(g)1(ix)
1. Hazardous Waste Code(s) and Manifest Number of first shipment.	√	√	√	√
2. Statement: this waste is not prohibited from land disposal.			√	
3. The waste is subject to the LDRs. The constituents of concern for F001-F005 and F039, and underlying hazardous constituents in characteristic wastes, unless the waste will be treated and monitored for all constituents. If all constituents will be treated and monitored, there is no need to put them all on the LDR notice.	√	√		
4. The notice must include the applicable wastewater/nonwastewater category (see parts (b)7 and 11 of this paragraph and subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanide).	√	√		
5. Waste analysis data (when available).	√	√	√	
6. Date the waste is subject to the				

prohibition.			√	
7. For hazardous debris, when treating with the alternative treatment technologies provided by subparagraph (3)(f) of this Rule: the contaminants subject to treatment, as described in part (3)(f)2 of this Rule; and an indication that these contaminants are being treated to comply with subparagraph (3)(f) of this Rule.	√		√	
8. For contaminated soil subject to LDRs as provided in part (3)(j)1 of this Rule, the constituents subject to treatment as described in part (3)(j)4 of this Rule, and the following statement: This contaminated soil [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and [is subject to/complies with] the soil treatment standards as provided by part (3)(j)3 of this Rule or the universal treatment standards.	√	√		
9. A certification is needed (see applicable section for exact wording).		√		√

(v) If a generator is managing and treating prohibited waste or contaminated soil in tanks, containers, or containment buildings regulated under Rule 1200-01-11-.03(4)(e) to meet applicable LDR treatment standards found at subparagraph (3)(a) of this Rule, the generator must develop and follow a written waste analysis plan which describes the procedures they will carry out to comply with the treatment standards. (Generators treating hazardous debris under the alternative treatment standards of Table 1, subparagraph (3)(f) of this Rule, however, are not subject to these waste analysis requirements.) The plan must be kept on site in the generator's records, and the following requirements must be met:

(I) The waste analysis plan must be based on a detailed chemical and physical analysis of a representative sample of the prohibited waste(s) being treated, and contain all information necessary to treat the waste(s) in accordance with the requirements of this Rule, including the selected testing frequency.

(II) Such plan must be kept in the facility's on-site files and made available to inspectors.

(III) Wastes shipped off-site pursuant to this subpart must comply with the notification requirements of subpart (iii) of this part.

(vi) If a generator determines that the waste or contaminated soil is restricted based solely on his knowledge of the waste, all supporting data used to make this determination must be retained on-site in the generator's files. If a generator determines that the waste is restricted based on testing this waste or an extract developed using the test method 1311 in " Test Methods for Evaluating Solid waste, Physical/Chemical Methods," EPA Publication SW-846, listed in Rule 1200-01-11-.01(2)(b) of this Rule, and all waste analysis data must be retained on-site in the generator's files.

(vii) If a generator determines that he is managing a prohibited waste that is excluded from the definition of hazardous or solid waste or is exempted from regulation under Rule 1200-01-11-.02(1)(b) through (f) subsequent to the point of generation (including deactivated characteristic hazardous wastes managed in wastewater treatment systems subject to the Clean Water Act (CWA) as specified at Rule 1200-01-11-.02(1)(d)1(ii) or that are CWA- equivalent or are managed in an underground injection well regulated by the SDWA), he must place a one-time notice describing such generation, subsequent exclusion from the definition of hazardous or solid waste or exemption from regulation under Rule Chapter 1200-01-11, and the disposition of the waste, in the facility's on-site files.

(viii) Generators must retain on-site a copy of all notices, certifications, waste analysis data, and other documentation produced pursuant to this subparagraph for at least three years from the date that the waste that is the subject of such documentation was last sent to on-site or off-site treatment, storage, or disposal. The three year record retention period is automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Commissioner. The requirements of this subpart apply to solid wastes even when the hazardous characteristic is removed prior to disposal, or when the waste is excluded from the definition of hazardous or solid waste under Rule 1200-01-11-.02(1)(b) through (f), or exempted from regulation under the Act, subsequent to the point of generation.

(ix) If a generator is managing a lab pack containing hazardous wastes and wishes to use the alternative treatment standard for lab packs found at part (3)(c)3 of this Rule:

(I) With the initial shipment of waste to a treatment facility, the generator must submit a notice that provides the information in column " .10(1)(g)1(ix)" in the Generator Paperwork Requirements Table of subpart (iv) of this part, and the following certification. The certification, which must be signed by an authorized representative and must be placed in the generator's files, must say the following:

" I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack contains only wastes that have not been excluded under Appendix IV to Rule 1200-01-11-.10 and that this lab pack will be sent to a combustion facility in compliance with the alternative treatment

standards for lab packs at Rule 1200-01-11-.10(3)(c)3. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."

(II) No further notification is necessary until such time that the wastes in the lab pack change, or the receiving facility changes, in which case a new notice and certification must be sent and a copy placed in the generator's file.

(III) If the lab pack contains characteristic hazardous wastes (D001-D043), underlying hazardous constituents (as defined in part (1)(b)10 of this Rule) need not be determined.

(IV) The generator must also comply with the requirements in subparts 1(vi) and (vii) of this subparagraph.

(x) Small quantity generators with tolling agreements pursuant to Rule 1200-01-11-.03(3)(a)5 must comply with the applicable notification and certification requirements of part 1 of this subparagraph for the initial shipment of the waste subject to the agreement. Such generators must retain on-site a copy of the notification and certification, together with the tolling agreement, for at least three years after termination or expiration of the agreement. The three-year record retention period is automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Commissioner.

2. Treatment facilities must test their wastes according to the frequency specified in their waste analysis plans as required by Rule 1200-01-11-.06(2)(d) (for permitted TSDFs) or Rule 1200-01-11-.05(2)(d) (for interim status facilities). Such testing must be performed as provided in subparts 2(i), 2(ii) and 2(iii) of this subparagraph.

(i) For wastes or contaminated soil with treatment standards expressed in the waste extract (TCLP), the owner or operator of the treatment facility must test an extract of the treatment residues, using test method 1311 (the Toxicity Characteristic Leaching Procedure, described in " Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 listed in Rule 1200-01-11-.01(2)(b)), to assure that the treatment residues extract meet the applicable treatment standards.

(ii) For wastes or contaminated soil with treatment standards expressed as concentrations in the waste, the owner or operator of the treatment facility must test the treatment residues (not an extract of such residues) to assure that they meet the applicable treatment standards.

(iii) A one-time notice must be sent with the initial shipment of waste or contaminated soil to the land disposal facility. A copy of the notice must be placed in the treatment facility's file.

(I) No further notification is necessary until such time that the waste or receiving facility change, in which case a new notice must be sent and a copy placed in the treatment facility's file.

(II) The one-time notice must include these requirements:

Treatment Facility Paperwork Requirements Table

Required information	.10(1)(g)2
1. Hazardous Waste Code(s) and Manifest Number of first shipment.	√
2. The waste is subject to the LDRs. The constituents of concern for F001-F005, and F039, and underlying hazardous constituents in characteristic wastes, unless the waste will be treated and monitored for all constituents. If all constituents will be treated and monitored, there is no need to put them all on the LDR notice.	√
3. The notice must include the applicable wastewater/nonwastewater category (see parts (b)7 and 11 of this paragraph) and subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanide).	√
4. Waste analysis data (when available).	√
5. For contaminated soil subject to LDRs as provided in part (3)(j)1 of this Rule, the constituents subject to treatment as described in part (3)(j)4 of this Rule, and the following statement, " this contaminated soil [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and [is subject to/complies with] the soil treatment standards as provided by part (3)(j)3 of this Rule."	√
6. A certification is needed (see applicable section for exact wording).	√

(iv) The treatment facility must submit a one-time certification signed by an authorized representative with the initial shipment of waste or treatment residue of a restricted waste to the land disposal facility. A certification is also necessary for contaminated soil and it must state:

" I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that it has been maintained and operated properly so as to comply with the treatment standards specified in Rule 1200-01-11-.10(3)(j) without impermissible dilution of the prohibited waste. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

(I) A copy of the certification must be placed in the treatment facility's on-site files. If the waste or treatment residue changes, or the receiving facility changes, a new certification must be sent to the receiving facility, and a copy placed in the file.

(II) Debris excluded from the definition of hazardous waste under Rule 1200-01-11-.02(1)(c)6 (i.e., debris treated by an extraction or destruction technology provided by Table 1, subparagraph (3)(f) of this Rule, and debris that the Commissioner has determined does not contain hazardous waste), however, is subject to the notification and certification requirements of part 4 of this subparagraph rather than the certification requirements of this subpart.

(III) For wastes with organic constituents having treatment standards expressed as concentration levels, if compliance with the treatment standards is based in whole or in part on the analytical detection limit alternative specified in part (3)(a)4 of this Rule, the certification, signed by an authorized representative, must state the following:

" I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion units as specified in Rule 1200-01-11-.10(3)(c), Table 1. I have been unable to detect the nonwastewater organic constituents, despite having used best good-faith efforts to analyze for such constituents. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

(IV) For characteristic wastes that are subject to the treatment standards in subparagraph (3)(a) of this Rule (other than those expressed as a method of treatment) or subparagraph (3)(j) of this Rule and that contain underlying hazardous constituents as defined in part (1)(b)10 of this Rule; if these wastes are treated on-site to remove the hazardous characteristic; and are then sent off-site for treatment of underlying hazardous constituents, the certification must state the following:

" I certify under penalty of law that the waste has been treated in accordance with the requirements of Rule 1200-01-11-.10(3)(a) or Rule 1200-01-11-.10(3)(j) to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

(V) For characteristic wastes that contain underlying hazardous constituents as defined in part (1)(b)10 of this Rule that are treated on-site to remove the hazardous characteristic and to treat underlying hazardous constituents to levels in subparagraph (3)(i) of this Rule Universal Treatment Standards, the certification must state the following:

" I certify under penalty of law that the waste has been treated in accordance with the requirements of Rule 1200-01-11-.10(3)(a) to remove the hazardous characteristic, and that underlying hazardous constituents, as defined in Rule 1200-01-11-.10(1)(b)10, have been treated on-site to meet the Rule 1200-01-11-.10(3)(i) Universal Treatment Standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

(v) If the waste or treatment residue will be further managed at a different treatment, storage, or disposal facility, the treatment, storage, or disposal facility sending the waste or treatment residue off-site must comply with the notice and certification requirements applicable to generators under this subparagraph.

(vi) Where the wastes are recyclable materials used in a manner constituting disposal subject to the provisions of Rule 1200-01-11-.09(3)(a)2 regarding treatment standards and prohibition levels, the owner or operator of a treatment facility (i.e., the recycler) must for the initial

shipment of waste, prepare a one time certification described in subpart (1)(g)2(iv) of this Rule, and a one time notice which includes the information in subpart (1)(g)2(iii) of this Rule (except the manifest number). The certification and notification must be placed in the facilitiy' s on-site files. If the waste or the receiving faciliy changes, a new certification and notification must be prepared and placed in the on-site files. In addition, the recycling facility must also keep records of the name and location of each entity receiving the hazardous waste-derived product.

3. Except where the owner or operator is disposing of any waste that is a recyclable material used in a manner constituting disposal pursuant to Rule 1200-01-11-.09(3)(a)2, the owner or operator of any land disposal facility disposing any waste subject to restrictions under this part must:

   (i) Have copies of the notice and certifications specified in part 1 or 2 of this subparagraph.

   (ii) Test the waste, or an extract of the waste or treatment residue developed using the test method 1311 (the Toxicity Characteristic Leaching Procedure), described in " Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 listed in Rule 1200-01-11-.01(2)(b), to assure that the wastes or treatment residues are in compliance with the applicable treatment standards set forth in paragraph (3) of this Rule. Such testing must be performed according to the frequency specified in the facility' s waste analysis plan as required by Rule 1200-01-11-.06(2)(d) or Rule 1200-01-11-.05(2)(d).

4. Generators or treaters who first claim that hazardous debris is excluded from the definition of hazardous waste under Rule 1200-01-11-.02(1)(c)6 (i.e., debris treated by an extraction or destruction technology provided by Table 1 of subparagraph (3)(f) of this Rule and debris that the Commissioner has determined does not contain hazardous waste) are subject to the following notification and certification requirements:

   (i) A one-time notification, including the following information, must be submitted to the Commissioner:

      (I) The name and address of the nonhazardous solid waste landfill (Subtitle D) facility receiving the treated debris;

      (II) A description of the hazardous debris as initially generated, including the applicable Hazardous Waste Code(s); and

      (III) For debris excluded under Rule 1200-01-11-.02(1)(c)6, the technology from Table 1 of subparagraph (3)(f) of this Rule used to treat the debris.

   (ii) The notification must be updated if the debris is shipped to a different facility, and, for debris excluded under Rule 1200-01-11-.02(1)(c)6(i), if a different type of debris is treated or if a different technology is used to treat the debris.

(iii) For debris excluded under Rule 1200-01-11-.02(1)(c)6, the owner or operator of the treatment facility must document and certify compliance with the treatment standards in Table 1 of subparagraph (3)(f) of this Rule as follows:

(I) Records must be kept of all inspections, evaluations, and analyses of treated debris that are made to determine compliance with the treatment standards;

(II) Records must be kept of any data or information the treater obtains during treatment of the debris that identifies key operating parameters of the treatment unit; and

(III) For each shipment of treated debris, a certification of compliance with the treatment standards must be signed by an authorized representative and placed in the facility's files. The certification must state the following:

"I certify under penalty of law that the debris has been treated in accordance with the requirements of Rule 1200-01-11-.10 (3)(f). I am aware that there are significant penalties for making a false certification, including the possibility of fine and imprisonment."

5. Generators and treaters who first received from the Commissioner a determination that a given contaminated soil subject to LDRs as provided in part (3)(j)1 of this Rule no longer contains a listed hazardous waste and generators and treaters who first determine that a contaminated soil subject to LDRs as provided in part (3)(j)1 of this Rule no longer exhibits a characteristic of hazardous waste must:

(i) Prepare a one-time only documentation of these determinations including all supporting information; and,

(ii) Maintain that information in the facility files and other records for a minimum of three years.

(h) (RESERVED) [40 CFR 268.8]

(i) Special Rules Regarding Wastes That Exhibit a Characteristic [40 CFR 268.9]

1. The initial generator of a solid waste must determine each Hazardous Waste Number (waste code) applicable to the waste in order to determine the applicable treatment standards under paragraph (3) of this Rule. This determination may be made concurrently with the hazardous waste determination requied in subparagraph (1)(b) of Rule 1200-01-11-.03. For purposes of this Rule, the waste will carry the waste code for any applicable listed waste (Rule 1200-01-11-.02(4)). In addition, where the waste exhibits a characteristic, the waste will carry one or more of the characteristic waste codes (Rule 1200-01-11-.02(3)), except when the treatment standard for the listed waste operates in lieu of the treatment standard for the characteristic waste, as specified in part 2 of this subparagraph. If the generator determines that their waste displays a hazardous characteristic (and is not D001 nonwastewaters treated by CMBST, RORGS, OR POLYM of subparagraph (3)(c) of this Rule,

Table 1), the generator must determine the underlying hazardous constituents (as defined at part (1)(b)10 of this Rule) in the characteristic waste.

2. Where a prohibited waste is both listed under Rule 1200-01-11-.02(4) and exhibits a characteristic under Rule 1200-01-11-.02(3), the treatment standard for the waste code listed in Rule 1200-01-11-.02(4) will operate in lieu of the standard for the waste code under Rule 1200-01-11-.02(3), provided that the treatment standard for the listed waste includes a treatment standard for the constituent that causes the waste to exhibit the characteristic. Otherwise, the waste must meet the treatment standards for all applicable listed and characteristic waste codes.

3. In addition to any applicable standards determined from the initial point of generation, no prohibited waste which exhibits a characteristic under Rule 1200-01-11-.02(3) may be land disposed unless the waste complies with the treatment standards under paragraph (3) of this Rule.

4. Wastes that exhibit a characteristic are also subject to subparagraph (1)(g) of this Rule requirements, except that once the waste is no longer hazardous, a one-time notification and certification must be placed in the generator' s or treater' s on-site files. The notification and certification must be updated if the process or operation generating the waste changes and/or if the nonhazardous solid waste landfill (Subtitle D) facility receiving the waste changes.

(i) The notification must include the following information:

(I) Name and address of the nonhazardous solid waste landfill (Subtitle D) facility receiving the waste shipment; and

(II) A description of the waste as initially generated, including the applicable Hazardous Waste Code(s), treatability group(s), and underlying hazardous constituents (as defined in part (1)(b)10 of this Rule), unless the waste will be treated and monitored for all underlying hazardous constituents. If all underlying hazardous constituents will be treated and monitored, there is no requirement to list any of the underlying hazardous constituents on the notice.

(ii) The certification must be signed by an authorized representative and must state the language found in subpart (1)(g)2(iv) of this Rule.

(I) If treatment removes the characteristic but does not meet standards applicable to underlying hazardous constituents, then the certification found in item (1)(g)2(iv)(IV) of this Rule applies.

(II) (RESERVED)

(j) (RESERVED) [40 CFR 268.10]

(k) (RESERVED) [40 CFR 268.11]

(l) (RESERVED) [40 CFR 268.12]

(m) (Reserved) [40 CFR 268.13]

(Note: The authority for implementing 40 CFR 268.13 Schedule for Wastes Identified or Listed after November 8, 1984 remains with the U.S. Environmental Protection Agency.)

(n) Surface Impoundment Exemptions [40 CFR 268.14]

1. This subparagraph defines additional circumstances under which an otherwise prohibited waste may continue to be placed in a surface impoundment.

2. Wastes which are newly identified or listed pursuant to Tennessee Code Annotated (T.C.A.) §§68-212-106 and 107 and stored in a surface impoundment that is newly subject to Rule Chapter 1200-01-11 as a result of the additional identification or listing, may continue to be stored in the surface impoundment for 48 months after the promulgation of the additional listing or characteristic, notwithstanding that the waste is otherwise prohibited from land disposal, provided that the surface impoundment is in compliance with the requirements of Rule 1200-01-11-.05(6) within 12 months after promulgation of the new listing or characteristic.

3. Wastes which are newly identified or listed pursuant to Tennessee Code Annotated (T.C.A.) §§68-212-106 and 107, and treated in a surface impoundment that is newly subject to Rule Chapter 1200-01-11 as a result of the additional identification or listing, may continue to be treated in that surface impoundment, notwithstanding that the waste is otherwise prohibited from land disposal, provided that surface impoundment is in compliance with the requirements of Rule 1200-01-11-.05(6) within 12 months after the promulgation of the new listing or characteristic. In addition, if the surface impoundment continues to treat hazardous waste after 48 months from promulgation of the additional listing or characteristic, it must then be in compliance with subparagraph (1)(d) of this Rule.

(2) Prohibitions on Land Disposal [40 CFR 268 Subpart C]

(a) Waste Specific Prohibitions -- Wood Preserving Wastes [40 CFR 268.30]

1. Effective September 12. 1998, the following wastes are prohibited from land disposal: the wastes specified in Rule 1200-01-11-.02 as Hazardous Waste codes F032, F034, and F035.

2. Effective May 12, 1999, the following wastes are prohibited from land disposal: soil and debris contaminated with F032, F034, F035; and radioactive wastes mixed with Hazardous waste codes F032, F034, and F035.

3. Between September 12, 1998 and May 12, 1999, soil and debris contaminated with F032, F034, F035; and radioactive waste mixed with F032, F034, and F035 may be disposed in a landfill or surface impoundment only if such unit is in compliance with the requirements specified in subparagraph (1)(e) of this Rule.

4. The requirements of parts 1 and 2 of this subparagraph do not apply if:

(i) The wastes meet the applicable treatment standards specified in paragraph (3) of this Rule;

(ii) Persons have been granted an exemption from a prohibition pursuant to a petition under subparagraph (1)(f) of this Rule, with respect to those wastes and units covered by the petition;

(iii) The wastes meet the applicable alternate treatment standards established pursuant to a petition granted under subparagraph (3)(e) of this Rule; or

(iv) Persons have been granted an extension to the effective date of a prohibition pursuant to subparagraph (1)(e) of this Rule, with respect to those wastes covered by the extension.

5. To determine whether a hazardous waste identified in this subparagraph exceeds the applicable treatment standards specified in subparagraph (3)(a) of this Rule, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable Universal Treatment Standard levels of subparagraph (3)(i) of this Rule, the waste is prohibited from land disposal, and all requirements of this Rule are applicable, except as otherwise specified.

(b) Waste Specific Prohibitions -- Dioxin-Containing Wastes [40 CFR 268.31]

1. The dioxin-containing wastes specified in Rule 1200-01-11-.02(4)(b) as Hazardous Waste Codes F020, F02l, F022, F023, F026, F027, and F028, are prohibited from land disposal unless the following condition applies:

(i) The F020-F023 and F026-F028 dioxin-containing waste is contaminated soil and debris resulting from a response action taken under section 104 or 106 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) or a corrective action taken under subtitle C of the Resource Conservation and Recovery Act (RCRA) or the Tennessee Hazardous Waste Management Act, as amended, TCA §§68-212-101 et seq.

2. The F020-F023 and F026-F028 dioxin-containing wastes listed in subpart (b)1(i) of this paragraph are prohibited from land disposal.

3. (Reserved) [40 CFR 268.31(c)]

(Note: The authority for implementing 40 CFR 268.31(c) pertaining to land disposal between November 8, 1988 and November 8, 1990 of the F020-F023 and F026-F028 dioxin-containing waste which is contaminated soil and debris resulting from a response action under CERCLA or a corrective action under RCRA remains with the U.S. Environmental Protection Agency.)

4. The requirements of parts (b)1 and 2 of this paragraph do not apply if:

(i) The wastes meet the standards of paragraph (3) of this Rule; or

(ii) Persons have been granted an exemption from a prohibition pursuant to a petition under subparagraph (1)(f) of this Rule, with respect to those wastes and units covered by the petition; or

(iii) Persons have been granted an extension to the effective date of a prohibition pursuant to subparagraph (1)(e) of this Rule, with respect to those wastes covered by the extension.

(c) Waste specific prohibitions – Soils exhibiting the toxicity characteristic for metals and containing PCBs [40 CFR 268.32]

1. The following wastes are prohibited from land disposal: any volumes of soil exhibiting the toxicity characteristic solely because of the presence of metals (D004-D011) and containing PCBs.

2. The requirements of part 1 of this subparagraph do not apply if:

(i) (I) The wastes contain halogenated organic compounds in total concentration less than 1, 000 mg/kg; and

(II) The wastes meet the treatment standards specified in paragraph (3) of this Rule
for Hazardous Waste Codes D004-D011, as applicable; or

(ii) (I) The wastes contain halogenated organic compounds in total concentration less than 1,000 mg/kg; and

(II) The wastes meet the alternative treatment standards specified in subparagraph
(3)(j) of this Rule for contaminated soil; or

(iii) Persons have been granted an exemption from a prohibition pursuant to a petition under subparagraph (1)(f) of this Rule with respect to those wastes and units covered by the petition; or

(iv) The wastes meet applicable alternative treatment standards established pursuant to a petition granted under subparagraph (3)(e) of this Rule.

(d) Waste Specific Prohibitions-Chlorinated Aliphatic Wastes [40 CFR 268.33]

1. Effective July 22, 2002 the wastes specified in Rule 1200-01-11-.02 as Hazardous Waste Codes K174 and K175, soil and debris contaminated with these wastes, radioactive wastes mixed with these wastes, and soil and debris contaminated with radioactive wastes mixed with these wastes are prohibited from land disposal.

2. The requirement of part 1 of this subparagraph do not apply if:

(i) The wastes meet the applicable treatment standards specified in paragraph (3) of this Rule;

(ii) Persons have been granted an exemption from a prohibition pursuant to a petition under subparagraph (1)(f) of Rule 1200-01-11-.10, with respect to those wastes and units covered by the petition;

(iii) The wastes meet the applicable treatment standards established pursuant to a petition granted under subparagraph (3)(e) of this Rule;

(iv) Hazardous debris has met the treatment standards in subparagraph (3)(a) of this Rule or the alternative treatment standards in subparagraph (3)(f) of this Rule; or

(v) Persons have been granted an extension to the effective date of a prohibition pursuant to subparagraph (1)(e) of this Rule, with respect to these wastes covered by the extension.

3. To determine whether a hazardous waste identified in this subparagraph exceeds the applicable treatment standards specified in subparagraph (3)(a) of this Rule, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains regulated constituents in excess of the applicable levels of paragraph (3) of this Rule, the waste is prohibited from land disposal, and all requirements of Rule 1200-01-11-.10 are applicable, except as otherwise specified.

4. Disposal of K175 wastes that have complied with all applicable Rule 1200-01-11-.10(3)(a) treatment standards must also be macroencapsulated in accordance with Rule 1200-01-11-.10(3)(f) Table 1 unless the waste is placed in:

(i) A hazardous waste (Subtitle C) monofill containing only K175 wastes that meet all applicable Rule 1200-01-11-.10(3)(a) treatment standards; or

(ii) A dedicated hazardous waste (Subtitle C) landfill cell in which all other wastes being co-disposed are at pH≤ 6.0.

(e) Waste Specific Prohibitions - Toxicity Characteristic Metal Wastes [40 CFR 268.34]

1. Effective July 19, 1999, the following wastes are prohibited from land disposal: the wastes specified in Rule 1200-01-11-.02 as Hazardous Waste Codes D004 - D011 that are newly identified (i.e., wastes, soil, or debris identified as hazardous by the Toxicity Characteristic Leaching Procedure but not the Extraction Procedure), and waste, soil, or debris from mineral processing operations that is identified as hazardous by the specifications at Rule 1200-01-11-.02.

2. Effective July 19, 1999, the following waste is prohibited from land disposal: Slag from secondary lead smelting which exhibits the Toxicity Characteristic due to the presence of one or more metals.

3. Effective May 26, 2000, the following wastes are prohibited from land disposal: newly identified characteristic wastes from elemental phosphorus processing; radioactive wastes mixed with hazardous wastes D004 - D011 that are newly identified (i.e., wastes, soil, or debris identified as hazardous by the Toxicity Characteristic Leaching Procedure but not the Extraction Procedure); or mixed with newly identified characteristic mineral processing wastes, soil, or debris.

4. Between July 19, 1999 and May 26, 2000, newly identified characteristic wastes from elemental phosphorus processing, radioactive waste mixed with D004 - D011 wastes that are newly identified (i.e. wastes, soil, or debris identified as hazardous by the Toxicity Characteristic Leaching Procedure but not the Extraction Procedure), or mixed with newly identified characteristic mineral processing wastes, soil, or debris may be disposed in a landfill or surface impoundment only if such unit is in compliance with the requirements specified in subparagraph (1)(e) of this Rule.

5. The requirements of parts 1 and 3 of this subparagraph do not apply if:

   (i) The wastes meet the applicable treatment standards specified in paragraph (3) of this Rule;

   (ii) Persons have been granted an exemption from a prohibition pursuant to a petition under subparagraph (1)(f) of this Rule, with respect to those wastes and units covered by the petition;

   (iii) The wastes meet the applicable alternate treatment standards established pursuant to a petition granted under subparagraph (3)(e) of this Rule; or

   (iv) Persons have been granted an extension to the effective date of a prohibition pursuant to subparagraph (1)(e) of this Rule, with respect to these wastes covered by the extension.

6. To determine whether a hazardous waste identified in this subparagraph exceeds the applicable treatment standards specified in subparagraph (3)(a) of this Rule, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents (including underlying hazardous constituents in characteristic wastes) in excess of the applicable Universal Treatment Standard levels of subparagraph (3)(i) of this Rule, the waste is prohibited from land disposal, and all requirements of this Rule are applicable, except as otherwise specified.

(f) Waste Specific Prohibitions-Petroleum Refining Wastes [40 CFR 268.35]

1. Effective November 28, 2000, the wastes specified in Rule 1200-01-11-.02 as Hazardous Wastes Codes K169, K170, K171, and K172, soils and debris contaminated with these wastes, radioactive wastes mixed with these hazardous

wastes, and soils and debris contaminated with these radioactive mixed wastes, are prohibited from land disposal.

2. The requirements of part 1 of this subparagraph do not apply if:

(i) The wastes meet the applicable treatment standards specified in paragraph (3) of this Rule;

(ii) Persons have been granted an exemption from a prohibition pursuant to a petition under subparagraph (1)(f) of this Rule, with respect to those wastes and units covered by the petition;

(iii) The wastes meet the applicable treatment standards established pursuant to a petition granted under subparagraph (3)(e) of this Rule;

(iv) Hazardous debris that have met treatment standards in subparagraph (3)(a) of this Rule or in the alternative treatment standards in subparagraph (3)(f) of this Rule; or

(v) Persons have been granted an extension to the effective date of a prohibition pursuant to subparagraph (1)(e) of this Rule, with respect to these wastes covered by the extension.

3. To determine whether a hazardous waste identified in this subparagraph exceeds the applicable treatment standards specified in subparagraph (3)(a) of this Rule, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable Universal Treatment Standard levels of subparagraph (3)(i) of this Rule, the waste is prohibited from land disposal, and all requirements of this Rule are applicable, except as otherwise specified.

(g) Waste Specific Prohibitions—Inorganic Chemical Wastes [40 CFR 268.36]

1. Effective January 12, 2004, the wastes specified in Rule 1200-01-11-.02 as Hazardous Wastes codes K176, K 177, and K178, and soil and debris contaminated with these wastes, radioactive wastes mixed with these wastes, and soil and debris contaminated with radioactive wastes mixed with these wastes are prohibited from land disposal.

2. The requirements of part 1 of this subparagraph do not apply if:

(i) The wastes meet the applicable treatment standards specified in paragraph (3) of this Rule;

(ii) Persons have been granted an exemption from a prohibition pursuant to a petition under subparagraph (1)(f) of this Rule, with respect to those wastes and units covered by the petition;

(iii) The wastes meet the applicable treatment standards established pursuant to a petition granted under subparagraph (3)(e) of this Rule;

(iv) Hazardous debris has met the treatment standards in subparagraph (3)(a) of this Rule or the alternative treatment standards in subparagraph (3)(f) of this Rule;

(v) Persons have been granted an extension to the effective date of a prohibition pursuant to subparagraph (1)(e) of this Rule, with respect to these wastes covered by the extension.

3. To determine whether a hazardous waste identified in this subparagraph exceeds the applicable treatment standards specified in subparagraph (3)(a) of this Rule, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains regulated constituents in excess of the applicable levels of paragraph (3) of this Rule, the waste is prohibited from land disposal, and all requirements of this part are applicable, except as otherwise specified.

(h) Waste Specific Prohibitions-Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated [40 CFR 268.37]

1. The wastes specified in Rule 1200-01-11-.02(3)(b) as D001 (and is not in the Hight TOC Ignitable Liquids Subcategory), and specified in Rule 1200-01-11-.02(3)(c) as D002, that are managed in systems other than those whose discharge is regulated under the Clean Water act (CWA), or that inject in Class I deep wells regulated under the Safe Drinking Water act (SDWA), or that are zero dischargers that engage in CWA-equivalent treatment before ultimate land disposal, are prohibited from land disposal. CWA-equivalent treatment means biological treatment for organics, alkaline chlorination or ferrous sulfate precipitation for cyanide, precipitation/sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or greater than these technologies.

2. The wastes specified in Rule 1200-01-11-.02(3)(b) as D001 (and is not in the High TOC Ignitable Liquids Subcategory), and specified in Rule 1200-01-11-.02(3)(c) a D002, that are managed in systems defined in 40 CFR 144.6(e) and 146.6(e) as Class V injection wells, that do not engage in CWA-equivalent treatment before injection, are prohibited from land disposal.

(i) Waste Specific Prohibitions-Newly Identified Organic Toxicity Characteristic Wastes and Newly Listed Coke By-product and Chlorotoluene Production Wastes [40 CFR 268.38]

1. The wastes specified in Rule 1200-01-11-.02(4)(c) as Hazardous Waste Codes K141, K142, K143, K144, K145, K147, K148, K149, K150, and K151 are prohibited from land disposal. In addition, debris contaminated with Hazardous Waste Codes F037, F038, K107-K112, K117, K118, K123-K126, K131, K132, K136, U328, U353, U359, and soil and debris contaminated with D012-D043,

K141-K145, and K147-K151 are prohibited from land disposal. The following wastes that are specified in Rule 1200-01-11-.02(3)(e) Table 1 as Hazardous Waste Codes: D012, D013, D014, D015, D016, D017, D018, D019, D020, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D031, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, D043 that are not radioactive, or that are managed in systems other than those whose discharge is regulated under the Clean Water Act (CWA), or that are zero dischargers that do not engage in CWA-equivalent treatment before ultimate land disposal, or that are injected in Class I deep wells regulated under the Safe Drinking Water Act (SDWA), are prohibited from land disposal. CWA-equivalent treatment means biological treatment for organics, alkaline chlorination or ferrous sulfate precipitation for cyanide, precipitation/ sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or better than these technologies.

2. On September 19, 1996, radioactive wastes that are mixed with D018-D043 that are managed in systems other than those whose discharge is regulated under the Clean Water Act (CWA), or that inject in Class I deep wells regulated under the Safe Drinking Water Act (SDWA), or that are zero dischargers that engage in CWA-equivalent treatment before ultimate land disposal, are prohibited from land disposal. CWA-equivalent treatment means biological treatment for organics, alkaline chlorination or ferrous sulfate precipitation for cyanide, precipitation/ sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or greater than these technologies. Radioactive wastes mixed with K141-K145, and K147-K151 are also prohibited from land disposal. In addition, soil and debris contaminated with these radioactive mixed wastes are prohibited from land disposal.

3. Between December 19, 1994 and September 19, 1996, the wastes included in part 2 of this subparagraph may be disposed in a landfill or surface impoundment, only if such unit is in compliance with the requirements specified in subparagraph (1)(e) of this Rule.

4. The requirements of parts 1,2, and 3 of this subparagraph do not apply if:

   (i) The wastes meet the applicable treatment standards specified in paragraph (3) of this Rule;

   (ii) Persons have been granted an exemption from a prohibition pursuant to a petition under subparagraph (1)(f) of this Rule, with respect to those wastes and units covered by the petition;

   (iii) The wastes meet the applicable alternate treatment standards established pursuant to a petition granted under subparagraph (3)(e) of this Rule;

   (iv) Persons have been granted an extension to the effective date of a prohibition pursuant to subparagraph (1)(e) of this Rule, with respect to these wastes covered by the extension.

5. To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in subparagraph (3)(a) of this Rule, the initial generator must test a sample of the waste extract or the entire waste,

depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable paragraph (3) of this Rule levels, the waste is prohibited from land disposal, and all requirements of Rule 1200-01-11-.10 are applicable, except as otherwise specified.

(j) Waste Specific Prohibitions--Spent Aluminum Potliners; Reactive; and Carbamate Wastes
[40 CFR 268.39]

1. On November 11, 1997, the wastes specified in Rule 1200-01-11-.02(4)(c) as Hazardous Waste Codes K156-K159, and K161; and in Rule 1200-01-11-.02(4)(d) as Hazardous Waste Codes P127, P128, P185, P188-P192, P194, P196-P199, P201-P205, U271, U278-U280, U364, U367, U372, U373, U387, U389, U394, U395, U404, and U409-U411 are prohibited from land disposal. In addition, soil and debris contaminated with any of these wastes are prohibited from land disposal.

2. On November 11, 1997, the wastes identified in Rule 1200-01-11-.02(3)(d) as D003 that are managed in systems other than those whose discharge is regulated under the Clean Water Act (CWA), or that inject in Class I deep wells regulated under the Safe Drinking Water Act (SDWA), or that are zero dischargers that engage in CWA-equivalent treatment before ultimate land disposal, are prohibited from land disposal. This prohibition does not apply to unexploded ordnance and other explosive devices which have been the subject of an emergency response. (Such D003 wastes are prohibited unless they meet the treatment standard of DEACT before land disposal (see subparagraph (3)(a) of this Rule)).

3. November 11, 1997, the wastes specified in Rule 1200-01-11-.02(4)(c) as Hazardous Waste Code K088 are prohibited from land disposal. In addition, soil and debris contaminated with these wastes are prohibited from land disposal.

4. On April 8, 1998, radioactive wastes mixed with K088, K156-K159, K161, P127, P128, P185, P188-P192, P194, P196-P199, P201-P205, U271, U278-U280, U364, U367, U372, U373, U387, U389, U394, U395, U404, or U409-U411 are prohibited from land disposal. In addition, soil and debris contaminated with any of these radioactive mixed wastes are prohibited from land disposal.

5. Between November 11, 1997 and April 8, 1998, the wastes included in parts 1, 3, and 4 of this subparagraph may be disposed in a landfill or surface impoundment, only if such unit is in compliance with the requirements specified in subparagraph (1)(e) of this Rule.

6. The requirements of parts 1, 2, 3, and 4 of this subparagraph do not apply if:

   (i) The wastes meet the applicable treatment standards specified in paragraph (3) of this Rule;

   (ii) Persons have been granted an exemption from a prohibition pursuant to a petition under subparagraph (1)(f) of this Rule, with respect to those wastes and units covered by the petition;

(iii) The wastes meet the applicable alternate treatment standards established pursuant to a petition granted under subparagraph (3)(e) of this Rule;

(iv) Persons have been granted an extension to the effective date of a prohibition pursuant to subparagraph (1)(e) of this Rule, with respect to these wastes covered by the extension.

7. To determine whether a hazardous waste identified in this subparagraph exceeds the applicable treatment standards specified in subparagraph (3)(a) of this Rule, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable paragraph (3) of this Rule levels, the waste is prohibited from land disposal, and all requirements of this Rule are applicable, except as otherwise specified.

(k) Waste Specific Prohibitions—Dyes and/or Pigments Production Wastes [40 CFR 268.20]

1. Effective August 23, 2005, the waste specified in Rule 1200-01-11-.02 as EPA Hazardous Waste Code K181, and soil and debris contaminated with this waste, radioactive wastes mixed with this waste, and soil and debris contaminated with radioactive wastes mixed with this waste are prohibited from land disposal.

2. The requirements of part 1 of this subparagraph do not apply if:

(i) The wastes meet the applicable treatment standards specified in paragraph (3) of this Rule;

(ii) Persons have been granted an exemption from a prohibition pursuant to a petition under subparagraph (1) (f) of this Rule, with respect to those wastes and units covered by the petition;

(iii) The wastes meet the applicable treatment standards established pursuant to a petition granted under subparagraph (3)(e) of this Rule;

(iv) Hazardous debris has met the treatment standards in subparagraph (3)(a) of this Rule or the alternative treatment standards in subparagraph (3)(f) of this Rule; or

(v) Persons have been granted an extension to the effective date of a prohibition pursuant to subparagraph (1) (e) of this Rule, with respect to these wastes covered by the extension.

3. To determine whether a hazardous waste identified in this subparagraph exceeds the applicable treatment standards specified in subparagraph (3) (a) of this Rule, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract of the waste, or the generator may use knowledge of the waste. If the waste contains regulated constituents in excess of the applicable paragraph (3) levels, the waste is prohibited from land disposal,

and all requirements of Rule 1200-01-11-.10 are applicable, except as otherwise specified.

(l) – (t) (RESERVED) [40 CFR 268.21-268.29]

(3) Treatment Standards [40 CFR 268 Subpart D]

(a) Applicability of Treatment Standards [40 CFR 268.40]

1. A prohibited waste identified in the table "Treatment Standards for Hazardous Wastes" may be land disposed only if it meets the requirements found in the table. For each waste, the table identifies one of three types of treatment standard requirements:

(i) All hazardous constituents in the waste or in the treatment residue must be at or below the values found in the table for that waste ("total waste standards"); or

(ii) The hazardous constituents in the extract of the waste or in the extract of the treatment residue must be at or below the values found in the table ("waste extract standards"); or

(iii) The waste must be treated using the technologies specified in the table ("technology standard"), which are described in detail in Table 1-Technology Codes and Description of Technology-Based Standards in subparagraph (3)(c) of this Rule.

2. For wastewaters, compliance with concentration level standards is based on maximums for any one day, except for D004 through D011 wastes for which the previously promulgated treatment standards based on grab samples remain in effect. For all nonwastewaters, compliance with concentration level standards is based on grab sampling. For wastes covered by the waste extract standards, the test Method 1311, the Toxicity Characteristic Leaching Procedure found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846, listed in 40 CFR 260.11; Rule 1200-01-11-.01(2)(b)1, must be used to measure compliance. An exception is made for D004 and D008, for which either of two test methods may be used: Method 1311, or Method 1310B, the Extraction Procedure Toxicity Test. For wastes covered by a technology standard, the wastes may be land disposed after being treated using that specified technology or an equivalent treatment technology approved by the Commissioner under the procedures set forth in part (3)(c)2 of this Rule.

3. When wastes with differing treatment standards for a constituent of concern are combined for purposes of treatment, the treatment residue must meet the lowest treatment standard for the constituent of concern.

4. Notwithstanding the prohibitions specified in part 1 of this subparagraph, treatment and disposal facilities may demonstrate (and certify pursuant to subpart (1)(g)2(v) of this Rule) compliance with the treatment standards for organic constituents specified by a footnote in the table "Treatment Standards for Hazardous Wastes" in this subparagraph, provided the following conditions are satisfied:

(i) The treatment standards for the organic constituents were established based on incineration in units operated in accordance with the technical requirements of Rule 1200-01-11-.06(15), or based on combustion in fuel substitution units operating in accordance with applicable technical requirements;

(ii) The treatment or disposal facility has used the methods referenced in subpart 4(i) of this subparagraph to treat the organic constituents; and

(iii) The treatment or disposal facility may demonstrate compliance with organic constituents if good-faith analytical efforts achieve detection limits for the regulated organic constituents that do not exceed the treatment standards specified in this section by an order of magnitude.

5. For characteristic wastes (D001-D043) that are subject to treatment standards in the following table "Treatment Standards for Hazardous Wastes" and are not managed in a wastewater treatment system that is regulated under the Clean Water Act (CWA), that is CWA-equivalent, or that is injected into a Class I nonhazardous deep injection well, all underlying hazardous constituents (as defined in part (1)(b)10 of this Rule) must meet Universal Treatment Standards, found in subparagraph (i) of this paragraph, " Table Universal Treatment Standards," prior to land disposal as defined in part (1)(b)6 of this Rule.

6. The treatment standards for F001-F005 nonwastewater constituents carbon disulfide, cyclohexanone, and/or methanol apply to wastes which contain only one, two, or three of these constituents. Compliance is measured for these constituents in the waste extract from test Method 1311, the Toxicity Characteristic Leaching Procedure found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846, listed in 40 CFR 260.11; Rule 1200-01-11-.01(2)(b). If the waste contains any of these three constituents along with any of the other 25 constituents found in F001-F005, then compliance with treatment standards for carbon disulfide, cyclohexanone, and/or methanol are not required.

7. Between August 26, 1996 and March 4, 1999 the treatment standards for the wastes specified in Rule 1200-01-11-.02(4)(c) as Hazardous Waste Codes K156-K161; and in Rule 1200-01-11-.02(4)(d) as Hazardous Waste Codes P127, P128, P185, P188-P192, P194, P196-P199, P201-P205, U271, U277-U280, U364-U367, U372, U373, U375-U379, U381-U387, U389-U396, U400-U404, U407, and U409-U411: and soil contaminated with these wastes; may be satisfied by either meeting the constituent concentrations presented in the table " Treatment Standards for Hazardous Wastes" in this subparagraph, or by treating the waste by the following technologies; combustion, as defined by the technology code CMBST at subparagraph (c) of this paragraph Table 1, for nonwastewaters; and biodegradation as defined by the technology code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined as technology code CMBST at subparagraph (c) of this paragraph Table 1, for wastewaters.

8. Prohibited D004-D011 mixed radioactive wastes and mixed radioactive listed wastes containing metal constituents, that were previously treated by stabilization to the treatment standards in effect at that time and then put into

storage, do not have to be retreated to meet treatment standards in this subparagraph prior to land disposal.

9. [RESERVED] [40 CFR 268.40(i)]

10. Effective November 28, 2000, the treatment standards for the wastes specified in Rule 1200-01-11-.02(4)(d) as Hazardous Waste Codes P185, P191, P192, P197, U364, U394, and U395 may be satisfied by either meeting the constituent concentrations presented in the table " Treatment Standards for Hazardous Wastes" in this subparagraph, or by treating the waste by the following technologies: combustion, as defined by the technology code CMBST at subparagraph (c) Table 1 of this paragraph, for nonwastewaters; and, biodegradation as defined by the technology code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined as technology code CMBST at subparagraph (c) Table 1 of this paragraph, for wastewaters.

TREATMENT STANDARDS FOR HAZARDOUS WASTES (Note: Abbreviated Rule citations refer to Rule Chapter 1200-01-11.) (Note. NA means Not Applicable.)					
Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	REGULATED HAZARDOUS CONSTITUENT		WASTE-WATERS	NON-WASTE-WATERS
		Common Name	CAS[2] Number	Concentration[3] in mg/l; Or Technology Code[4]	Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code[4]
D001 [9]	Ignitable Characteristic Wastes, except for the Rule 1200-01-11-.02(3)(b)1(i) High TOC Subcategory.	NA	NA	DEACT and meet .10(3)(i) standards[8]; or RORGS; or CMBST	DEACT and meet Rule 1200-01-11-.10(3)(i) standards[8]; or RORGS; or CMBST
	High TOC Ignitable Characteristic Liquids Subcategory based on Rule 1200-01-11-.02(3)(b)1(i) - Greater than or equal to 10% total organic carbon. (Note: This subcategory consists of nonwastewaters only.)	NA	NA	NA	RORGS; CMBST; or POLYM
D002 [9]	Corrosive Characteristic Wastes.	NA	NA	DEACT and meet .10(3)(i) standards[8]	DEACT and meet Rule 1200-01-11-.10(3)(i) standards[8]
D002, D004, D005, D006, D007, D008, D009, D010, D011	Radioactive high level wastes generated during the reprocessing of fuel rods. (Note: This subcategory consists of nonwastewaters only.)	Corrosivity (pH)	NA	NA	HLVIT
		Arsenic	7440-38-2	NA	HLVIT
		Barium	7440-39-3	NA	HLVIT

		Cadmium	7440-43-9	NA	HLVIT
		Chromium (Total)	7440-47-3	NA	HLVIT
		Lead	7439-92-1	NA	HLVIT
		Mercury	7439-97-6	NA	HLVIT
		Selenium	7782-49-2	NA	HLVIT
		Silver	7440-22-4	NA	HLVIT
D003 [9]	Reactive Sulfides Subcategory based on Rule 1200-01-11-.02(3)(d)1(v).	NA	NA	DEACT	DEACT
	Explosives Subcategory based on Rule 1200-01-11-.02(3)(d)1(vi), (vii) and (viii).	NA	NA	DEACT and meet .10(3)(i) standards[8]	DEACT and meet Rule 1200-01-11-.10(3)(i) standards[8]
	Unexploded ordnance and other explosive devices which have been the subject of an emergency response.	NA	NA	DEACT	DEACT
	Other Reactives Subcategory based on Rule 1200-01-11-.02(3)(d)1(i).	NA	NA	DEACT and meet .10(3)(i) standards[8]	DEACT and meet Rule 1200-01-11-.10(3)(i) standards[8]
	Water Reactive Subcategory based on Rule 1200-01-11-.02(3)(d)1(ii), (iii) and (iv). (Note: This subcategory consists of nonwastewaters only.)	NA	NA	NA	DEACT and meet Rule 1200-01-11-.10(3)(i) standards[8]
	Reactive Cyanides Subcategory based on Rule 1200-01-11-.02(3)(d)1(v).	Cyanides (Total)[7]	57-12-5	Reserved	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30

D004 [9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for arsenic based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Arsenic	7440-38-2	1.4 and meet .10(3)(i) standards[8]	5.0 mg/l TCLP and meet Rule 1200-01-11-.10(3)(i) standards[8]
D005 [9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for barium based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Barium	7440-39-3	1.2 and meet .10(3)(i) standards[8]	21 mg/l TCLP and meet Rule 1200-01-11-.10(3)(i) standards[8]
D006 [9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for cadmium based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Cadmium	7440-43-9	0.69 and meet .10(3)(i) standards[8]	0.11 mg/l TCLP and meet Rule 1200-01-11-.10(3)(i) standards[8]
	Cadmium Containing Batteries Subcategory. (Note: This subcategory consists of nonwastewaters only.)	Cadmium	7440-43-9	NA	RTHRM
D006 [9]	Radioactively contaminated cadmium containing batteries. (Note: This subcategory consists of nonwastewaters only)	Cadmium	7440-43-9	NA	Macroencap-sulation in accordance with subparagraph .10(3)(f)
D007 [9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for chromium based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Chromium (Total)	7440-47-3	2.77 and meet .10(3)(i) standards[8]	0.60 mg/l TCLP and meet Rule 1200-01-11-.10(3)(i) standards[8]
D008 [9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for lead based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Lead	7439-92-1	0.69 and meet .10(3)(i) standards[8]	0.75 mg/l TCLP and meet Rule 1200-01-11-.10(3)(i) standards[8]

	Lead Acid Batteries Subcategory (Note: This standard only applies to lead acid batteries that are identified as RCRA hazardous wastes and that are not excluded elsewhere from regulation under the land disposal restrictions of Rule 1200-01-11-.10 or exempted under other regulations (see Rule 1200-01-11-.09(7)(a)). This subcategory consists of nonwastewaters only.)	Lead	7439-92-1	NA	RLEAD
	Radioactive Lead Solids Subcategory (Note: these lead solids include, but are not limited to, all forms of lead shielding and other elemental forms of lead. These lead solids do not include treatment residuals such as hydroxide sludges, other wastewater treatment residuals, or incinerator ashes that can undergo conventional pozzolanic stabilization, nor do they include organo-lead materials that can be incinerated and stabilized as ash. This subcategory consists of nonwastewaters only.)	Lead	7439-92-1	NA	MACRO

D009 [9]	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain greater than or equal to 260 mg/kg total mercury that also contain organics and are not incinerator residues. (High Mercury-Organic Subcategory)	Mercury	7439-97-6	NA	IMERC; OR RMERC
	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain greater than or equal to 260 mg/kg total mercury that are inorganic, including incinerator residues and residues from RMERC. (High Mercury-Inorganic Subcategory)	Mercury	7439-97-6	NA	RMERC
	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain less than 260 mg/kg total mercury and that are residues from RMERC only. (Low Mercury Subcategory)	Mercury	7439-97-6	NA	0.20 mg/l TCLP and meet Rule 1200-01-11-.10(3)(i) standards[8]

	All other nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain less than 260 mg/kg total mercury and that are not residues from RMERC. (Low Mercury Subcategory)	Mercury	7439-97-6	NA	0.025 mg/l TCLP and meet Rule 1200-01-11-.10(3)(i) standards[8]
	All D009 wastewaters.	Mercury	7439-97-6	0.15 and meet -.10(3)(i) standards[8]	NA
	Elemental mercury contaminated with radioactive materials. (Note: This subcategory consists of nonwastewaters only.)	Mercury	7439-97-6	NA	AMLGM
	Hydraulic oil contaminated with Mercury Radioactive Materials Subcategory. (Note: This subcategory consists of nonwastewaters only.)	Mercury	7439-97-6	NA	IMERC
D009 [9]	Radioactively contaminated mercury containing batteries. (Note: This subcategory consists of nonwastewaters only)	Mercury	7439-97-6	NA	Macroencap-sulation in accordance with subparagraph .10(3)(f)
D010 [9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for selenium based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Selenium	7782-49-2	0.82 and meet -.10(3)(i) standards[8]	5.7 mg/l TCLP and meet -.10(3)(i) standards[8]

D011 [9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for silver based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Silver	7440-22-4	0.43 and meet -.10(3)(i) standards[8]	0.14 mg/l TCLP and meet -.10(3)(i) standards[8]
D011 [9]	Radioactively contaminated silver containing batteries. (Note: This subcategory consists of nonwastewaters only)	Silver	7440-22-4	NA	Macroencapsul a-tion in accordance with subparagraph .10(3)(f)
D012 [9]	Wastes that are TC for Endrin based on the TCLP in SW846 Method 1311.	Endrin	72-20-8	BIODG; or CMBST	0.13 and meet -.10(3)(i) standards[8]
		Endrin aldehyde	7421-93-4	BIODG; or CMBST	0.13 and meet -.10(3)(i) standards[8]
D013 [9]	Wastes that are TC for Lindane based on the TCLP in SW846 Method 1311.	alpha-BHC	319-84-6	CARBN; or CMBST	0.066 and meet -.10(3)(i) standards[8]
		beta-BHC	319-85-7	CARBN; or CMBST	0.066 and meet -.10(3)(i) standards[8]
		delta-BHC	319-86-8	CARBN; or CMBST	0.066 and meet -.10(3)(i) standards[8]
		gamma-BHC (Lindane)	58-89-9	CARBN; or CMBST	0.066 and meet -.10(3)(i) standards[8]
D014 [9]	Wastes that are TC for Methoxychlor based on the TCLP in SW846 Method 1311.	Methoxychlor	72-43-5	WETOX or CMBST	0.18 and meet -.10(3)(i) standards[8]

D015 [9]	Wastes that are TC for Toxaphene based on the TCLP in SW846 Method 1311.	Toxaphene	8001-35-2	BIODG or CMBST	2.6 and meet -.10(3)(i) standards[8]
D016 [9]	Wastes that are TC for 2,4-D (2,4-Dichlorophenoxyacetic acid) based on the TCLP in SW846 Method 1311.	2,4-D (2,4-Dichloropheno-xyacetic acid)	94-75-7	CHOXD, BIODG, or CMBST	10 and meet -.10(3)(i) standards[8]
D017 [9]	Wastes that are TC for 2,4,5-TP (Silvex) based on the TCLP in SW846 Method 1311.	2,4,5-TP (Silvex)	93-72-1	CHOXD or CMBST	7.9 and meet -.10(3)(i) standards[8]
D018 [9]	Wastes that are TC for Benzene based on the TCLP in SW846 Method 1311.	Benzene	71-43-2	0.14 and meet -.10(3)(i) standards[8]	10 and meet -.10(3)(i) standards[8]
D019 [9]	Wastes that are TC for Carbon tetrachloride based on the TCLP in SW846 Method 1311.	Carbon tetrachloride	56-23-5	0.057 and meet -.10(3)(i) standards[8]	6.0 and meet -.10(3)(i) standards[8]
D020 [9]	Wastes that are TC for Chlordane based on the TCLP in SW846 Method 1311.	Chlordane (alpha and gamma isomers)	57-74-9	0.0033 and meet -.10(3)(i) standards[8]	0.26 and meet -.10(3)(i) standards[8]
D021 [9]	Wastes that are TC for Chlorobenzene based on the TCLP in SW846 Method 1311.	Chlorobenzene	108-90-7	0.057 and meet -.10(3)(i) standards[8]	6.0 and meet -.10(3)(i) standards[8]
D022 [9]	Wastes that are TC for Chloroform based on the TCLP in SW846 Method 1311.	Chloroform	67-66-3	0.046 and meet -.10(3)(i) standards[8]	6.0 and meet -.10(3)(i) standards[8]
D023 [9]	Wastes that are TC for o-Cresol based on the TCLP in SW846 Method 1311.	o-Cresol	95-48-7	0.11 and meet -.10(3)(i) standards[8]	5.6 and meet -.10(3)(i) standards[8]
D024 [9]	Wastes that are TC for m-Cresol based on the TCLP in SW846 Method 1311.	m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77 and meet -.10(3)(i) standards[8]	5.6 and meet -.10(3)(i) standards[8]

D025 [9]	Wastes that are TC for p-Cresol based on the TCLP in SW846 Method 1311.	p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77 and meet -.10(3)(i) standards[8]	5.6 and meet -.10(3)(i) standards[8]
D026 [9]	Wastes that are TC for Cresols (Total) based on the TCLP in SW846 Method 1311.	Cresol-mixed isomers (Cresylic acid)(sum of o-, m-, and p-cresol concentrations)	1319-77-3	0.88 and meet -.10(3)(i) standards[8]	11.2 and meet -.10(3)(i) standards[8]
D027 [9]	Wastes that are TC for p-Dichlorobenzene based on the TCLP in SW846 Method 1311.	p-Dichlorobenzene (1,4-Dichlorobenzene)	106-46-7	0.090 and meet -.10(3)(i) standards[8]	6.0 and meet -.10(3)(i) standards[8]
D028 [9]	Wastes that are TC for 1,2-Dichloroethane based on the TCLP in SW846 Method 1311.	1,2-Dichloroethane	107-06-2	0.21 and meet -.10(3)(i) standards[8]	6.0 and meet -.10(3)(i) standards[8]
D029 [9]	Wastes that are TC for 1,1-Dichloroethylene based on the TCLP in SW846 Method 1311.	1,1-Dichloroethylene	75-35-4	0.025 and meet -.10(3)(i) standards[8]	6.0 and meet -.10(3)(i) standards[8]
D030 [9]	Wastes that are TC for 2,4-Dinitrotoluene based on the TCLP in SW846 Method 1311.	2,4-Dinitrotoluene	121-14-2	0.32 and meet -.10(3)(i) standards[8]	140 and meet -.10(3)(i) standards[8]
D031 [9]	Wastes that are TC for Heptachlor based on the TCLP in SW846 Method 1311.	Heptachlor	76-44-8	0.0012 and meet -.10(3)(i) standards[8]	0.066 and meet -.10(3)(i) standards[8]
		Heptachlor epoxide	1024-57-3	0.016 and meet -.10(3)(i) standards[8]	0.066 and meet -.10(3)(i) standards[8]
D032 [9]	Wastes that are TC for Hexachlorobenzene based on the TCLP in SW846 Method 1311.	Hexachloro-benzene	118-74-1	0.055 and meet -.10(3)(i) standards[8]	10 and meet -.10(3)(i) standards[8]
D033 [9]	Wastes that are TC for Hexachlorobutadiene based on the TCLP in SW846 Method 1311.	Hexachloro-butadiene	87-68-3	0.055 and meet -.10(3)(i) standards[8]	5.6 and meet -.10(3)(i) standards[8]

D034 [9]	Wastes that are TC for Hexachloroethane based on the TCLP in SW846 Method 1311.	Hexachloroethane	67-72-1	0.055 and meet -.10(3)(i) standards[8]	30 and meet -.10(3)(i) standards[8]
D035 [9]	Wastes that are TC for Methyl ethyl ketone based on the TCLP in SW846 Method 1311.	Methyl ethyl ketone	78-93-3	0.28 and meet -.10(3)(i) standards[8]	36 and meet -.10(3)(i) standards[8]
D036 [9]	Wastes that are TC for Nitrobenzene based on the TCLP in SW846 Method 1311.	Nitrobenzene	98-95-3	0.068 and meet -.10(3)(i) standards[8]	14 and meet -.10(3)(i) standards[8]
D037 [9]	Wastes that are TC for Pentachlorophenol based on the TCLP in SW846 Method 1311.	Pentachlorophenol	87-86-5	0.089 and meet -.10(3)(i) standards[8]	7.4 and meet -.10(3)(i) standards[8]
D038 [9]	Wastes that are TC for Pyridine based on the TCLP in SW846 Method 1311.	Pyridine	110-86-1	0.014 and meet -.10(3)(i) standards[8]	16 and meet -.10(3)(i) standards[8]
D039 [9]	Wastes that are TC for Tetrachloroethylene based on the TCLP in SW846 Method 1311.	Tetrachloro-ethylene	127-18-4	0.056 and meet -.10(3)(i) standards[8]	6.0 and meet -.10(3)(i) standards[8]
D040 [9]	Wastes that are TC for Trichloroethylene based on the TCLP in SW846 Method 1311.	Trichloroethylene	79-01-6	0.054 and meet -.10(3)(i) standards[8]	6.0 and meet -.10(3)(i) standards[8]
D041 [9]	Wastes that are TC for 2,4,5-Trichlorophenol based on the TCLP in SW846 Method 1311.	2,4,5-Trichlorophenol	95-95-4	0.18 and meet -.10(3)(i) standards[8]	7.4 and meet -.10(3)(i) standards[8]
D042 [9]	Wastes that are TC for 2,4,6-Trichlorophenol based on the TCLP in SW846 Method 1311.	2,4,6-Trichlorophenol	88-06-2	0.035 and meet -.10(3)(i) standards[8]	7.4 and meet -.10(3)(i) standards[8]
D043 [9]	Wastes that are TC for Vinyl chloride based on the TCLP in SW846 Method 1311.	Vinyl chloride	75-01-4	0.27 and meet -.10(3)(i) standards[8]	6.0 and meet -.10(3)(i) standards[8]

F001, F002, F003, F004, & F005	F001, F002, F003, F004 and/or F005 solvent wastes that contain any combination of one or more of the following spent solvents: acetone, benzene, n-butyl alcohol, carbon disulfide, carbon tetrachloride, chlorinated fluorocarbons, chlorobenzene, o-cresol, m-cresol, p-cresol, cyclohexanone, o-dichlorobenzene, 2-ethoxyethanol, ethyl acetate, ethyl benzene, ethyl ether, isobutyl alcohol, methanol, methylene chloride, methyl ethyl ketone, methyl isobutyl ketone, nitrobenzene, 2-nitropropane, pyridine, tetrachloroethylene, toluene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethylene, trichloromonofluoromethane, and/or xylenes [except as specifically noted in other subcategories]. See further details of these listings in Rule 1200-01-11-.02(4)(b).	Acetone	67-64-1	0.28	160
		Benzene	71-43-2	0.14	10
		n-Butyl alcohol	71-36-3	5.6	2.6
		Carbon disulfide	75-15-0	3.8	NA
		Carbon tetrachloride	56-23-5	0.057	6.0

		Chlorobenzene	108-90-7	0.057	6.0
		o-Cresol	95-48-7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
		Cresol-mixed isomers (Cresylic acid) (sum of o-, m-, and p-cresol concentrations)	1319-77-3	0.88	11.2
		Cyclohexanone	108-94-1	0.36	NA
		o-Dichlorobenzene	95-50-1	0.088	6.0
		Ethyl acetate	141-78-6	0.34	33
		Ethyl benzene	100-41-4	0.057	10
		Ethyl ether	60-29-7	0.12	160
		Isobutyl alcohol	78-83-1	5.6	170
		Methanol	67-56-1	5.6	NA
		Methylene chloride	75-9-2	0.089	30
		Methyl ethyl ketone	78-93-3	0.28	36
		Methyl isobutyl ketone	108-10-1	0.14	33

		Nitrobenzene	98-95-3	0.068	14
		Pyridine	110-86-1	0.014	16
		Tetrachloro-ethylene	127-18-4	0.056	6.0
		Toluene	108-88-3	0.080	10
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.057	30
		Trichloroethylene	79-01-6	0.054	6.0
		Trichloromono-fluoromethane	75-69-4	0.020	30
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
	F003 and/or F005 solvent wastes that contain any combination of one or more of the following three solvents as the only listed F001-5 solvents: carbon disulfide, cyclohexanone, and/or methanol. (formerly Rule 1200-01-11-.10(3)(b)3)	Carbon disulfide	75-15-0	3.8	4.8 mg/l TCLP
		Cyclohexanone	108-94-1	0.36	0.75 mg/l TCLP
		Methanol	67-56-1	5.6	0.75 mg/l TCLP

	F005 solvent waste containing 2-Nitropropane as the only listed F001-5 solvent.	2-Nitropropane	79-46-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
	F005 solvent waste containing 2-Ethoxyethanol as the only listed F001-5 solvent.	2-Ethoxyethanol	110-80-5	BIODG: or CMBST	CMBST
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.	Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP
F007	Spent cyanide plating bath solutions from electroplating operations.	Cadmium	7440-43-9	NA	0.11 mg/l TCLP

		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.	Cadmium	7440-43-9	NA	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.	Cadmium	7440-43-9	NA	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590

		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	NA
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.	Cadmium	7440-43-9	NA	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP
F012	Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process.	Cadmium	7440-43-9	NA	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP

		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP
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.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30

F020, F021, F022, F023, F026	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: (1) tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives, excluding wastes from the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol (F020); (2) pentachlorophenol, or of intermediates used to produce its derivatives (i.e., F021); (3) tetra-, penta-, or hexachlorobenzenes under alkaline conditions (i.e., F022); and 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: (1) tri- or tetrachlorophenols, excluding wastes from equipment used only for the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol (F023); (2) tetra-, penta-, or hexachlorobenzenes under alkaline conditions (i.e., F026).	HxCDDs (All Hexachloro-dibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All Hexachloro-dibenzofurans)	NA	0.000063	0.001

PeCDDs (All Pentachloro-dibenzo-p-dioxins)	NA	0.000063	0.001
PeCDFs (All Pentachloro-dibenzofurans)	NA	0.000035	0.001
Pentachlorophenol	87-86-5	0.089	7.4
TCDDs (All Tetrachloro-dibenzo-p-dioxins)	NA	0.000063	0.001
TCDFs (All Tetrachloro-dibenzofurans)	NA	0.000063	0.001
2,4,5-Trichlorophenol	95-95-4	0.18	7.4
2,4,6-Trichlorophenol	88-06-2	0.035	7.4
2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4

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 Rule 1200-01-11-.02(4)(b) or (c)).	All F024 wastes	NA	CMBST[11]	CMBST[11]
		2-Chloro-1,3-butadiene	126-99-8	0.057	0.28
		3-Chloropropylene	107-05-1	0.036	30
		1,1-Dichloroethane	75-34-3	0.059	6.0
		1,2-Dichloroethane	107-06-2	0.21	6.0
		1,2-Dichloropropane	78-87-5	0.85	18
		cis-1,3-Dichloropropylene	10061-01-5	0.036	18
		trans-1,3-Dichloropropylene	10061-02-6	0.036	18
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28

		Hexachloroethane	67-72-1	0.055	30
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
F025	Condensed light ends 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. F025 - Light Ends Subcategory	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		1,2-Dichloroethane	107-06-2	0.21	6.0
		1,1-Dichloroethylene	75-35-4	0.025	6.0
		Methylene chloride	75-9-2	0.089	30
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
		Vinyl chloride	75-01-4	0.27	6.0

	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. F025 - Spent Filters/Aids and Desiccants Subcategory	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Hexachloro-benzene	118-74-1	0.055	10
		Hexachloro-butadiene	87-68-3	0.055	5.6
		Hexachloroethane	67-72-1	0.055	30
		Methylene chloride	75-9-2	0.089	30
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
		Vinyl chloride	75-01-4	0.27	6.0

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.).	HxCDDs (All Hexachloro-dibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All Hexachloro-dibenzofurans)	NA	0.000063	0.001
		PeCDDs (All Pentachloro-dibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Pentachloro-dibenzofurans)	NA	0.000035	0.001
		Pentachlorophenol	87-86-5	0.089	7.4
		TCDDs (All Tetrachloro-dibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachloro-dibenzofurans)	NA	0.000063	0.001
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4

F028	Residues resulting from the incineration or thermal treatment of soil contaminated with Hazardous Wastes Codes F020, F021, F023, F026, and F027.	HxCDDs (All Hexachloro-dibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All Hexachloro-dibenzofurans)	NA	0.000063	0.001
		PeCDDs (All Pentachloro-dibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Pentachloro-dibenzofurans)	NA	0.000035	0.001
		Pentachlorophenol	87-86-5	0.089	7.4
		TCDDs (All Tetrachloro-dibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachloro-dibenzofurans)	NA	0.000063	0.001
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4

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 Rule 1200-01-11-.02(4)(f) 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 penta-chlorophenol.	Acenaphthene	83-32-9	0.059	3.4
		Anthracene	120-12-7	0.059	3.4
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(b)fluor-anthene (difficult to distinguish from benzo(k)fluor-anthene)	205-99-2	0.11	6.8

		Benzo(k)fluor-anthene (difficult to distinguish from benzo(b)fluor-anthene)	207-08-9	0.11	6.8
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)-anthracene	53-70-3	0.055	8.2
		2-4-Dimethyl phenol	105-67-9	0.036	14
		Fluorene	86-73-7	0.059	3.4
		Hexachloro-dibenzo-p-dioxins	NA	0.000063, or CMBST[11]	0.001, or CMBST[11]
		Hexachloro-dibenzofurans	NA	0.000063, or CMBST[11]	0.001, or CMBST[11]
		Indeno (1,2,3-c,d) pyrene	193-39-5	0.0055	3.4
		Naphthalene	91-20-3	0.059	5.6
		Pentachloro-dibenzo-p-dioxins	NA	0.000063, or CMBST[11]	0.001, or CMBST[11]
		Pentachloro-dibenzofurans	NA	0.000035, or CMBST[11]	0.001, or CMBST[11]
		Pentachlorophenol	87-86-5	0.089	7.4
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
		Tetrachloro-dibenzo-p-dioxins	NA	0.000063, or CMBST[11]	0.001, or CMBST[11]
		Tetrachloro-dibenzofurans	NA	0.000063, or CMBST[11]	0.001, or CMBST[11]
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP

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.	Acenaphthene	83-32-9	0.059	3.4
		Anthracene	120-12-7	0.059	3.4
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(b)fluor-anthene (difficult to distinguish from benzo(k)fluor-anthene)	205-99-2	0.11	6.8
		Benzo(k)fluor-anthene (difficult to distinguish from benzo(b)fluor-nthene)	207-08-9	0.11	6.8
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Fluorene	86-73-7	0.059	3.4
		Indeno (1,2,3-c,d) pyrene	193-39-5	0.0055	3.4
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Pyrene	129-00-0	0.067	8.2
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP

		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
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.	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP

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 Rule 1200-01-11-.02(4)(b)2(ii) (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.	Acenaphthene	83-32-9	0.059	NA
		Anthracene	120-12-7	0.059	3.4

Benzene	71-43-2	0.14	10
Benz(a)anthracene	56-55-3	0.059	3.4
Benzo(a)pyrene	50-32-8	0.061	3.4
bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
Chrysene	218-01-9	0.059	3.4
Di-n-butyl phthalate	84-74-2	0.057	28
Ethylbenzene	100-41-4	0.057	10
Fluorene	86-73-7	0.059	NA
Naphthalene	91-20-3	0.059	5.6
Phenanthrene	85-01-8	0.059	5.6
Phenol	108-95-2	0.039	6.2
Pyrene	129-00-0	0.067	8.2
Toluene	108-88-3	0.080	10
Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
Cyanides (Total)[7]	57-12-5	1.2	590
Lead	7439-92-1	0.69	NA

		Nickel	7440-02-0	NA	11 mg/l TCLP
F038	Petroleum refinery secondary (emulsified) oil/water/solids separation 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 floatation (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 Rule 1200-01-11-.02(4)(b)2(ii) (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological units) and F037, K048, and K051 are not included in this listing.	Benzene	71-43-2	0.14	10

		Benzo(a)pyrene	50-32-8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Chrysene	218-01-9	0.059	3.4
		Di-n-butyl phthalate	84-74-2	0.057	28
		Ethylbenzene	100-41-4	0.057	10
		Fluorene	86-73-7	0.059	NA
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	11 mg/l TCLP

F039	Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under paragraph (3) of this Rule. (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.).	Acenaphthylene	208-96-8	0.059	3.4
		Acenaphthene	83-32-9	0.059	3.4
		Acetone	67-64-1	0.28	160
		Acetonitrile	75-05-8	5.6	NA
		Acetophenone	96-86-2	0.010	9.7
		2-Acetylamino-fluorene	53-96-3	0.059	140
		Acrolein	107-02-8	0.29	NA
		Acrylonitrile	107-13-1	0.24	84
		Aldrin	309-00-2	0.021	0.066
		4-Aminobiphenyl	92-67-1	0.13	NA
		Aniline	62-53-3	0.81	14
		o-Anisidine (2-methoxyaniline)	90-04-0	0.010	0.66

		Anthracene	120-12-7	0.059	3.4
		Aramite	140-57-8	0.36	NA
		alpha-BHC	319-84-6	0.00014	0.066
		beta-BHC	319-85-7	0.00014	0.066
		delta-BHC	319-86-8	0.023	0.066
		gamma-BHC	58-89-9	0.0017	0.066
		Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(b)fluor-anthene (difficult to distinguish from benzo(k)fluor-anthene)	205-99-2	0.11	6.8
		Benzo(k)fluor-anthene (difficult to distinguish from benzo(b)fluor-anthene)	207-08-9	0.11	6.8
		Benzo(g,h,i)-perylene	191-24-2	0.0055	1.8
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Bromodichloro-methane	75-27-4	0.35	15
		Methyl bromide (Bromomethane)	74-83-9	0.11	15
		4-Bromophenyl phenyl ether	101-55-3	0.055	15

n-Butyl alcohol	71-36-3	5.6	2.6
Butyl benzyl phthalate	85-68-7	0.017	28
2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	88-85-7	0.066	2.5
Carbon disulfide	75-15-0	3.8	NA
Carbon tetrachloride	56-23-5	0.057	6.0
Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
p-Chloroaniline	106-47-8	0.46	16
Chlorobenzene	108-90-7	0.057	6.0
Chlorobenzilate	510-15-6	0.10	NA
2-Chloro-1,3-butadiene	126-99-8	0.057	NA
Chlorodibro-methane	124-48-1	0.057	15
Chloroethane	75-00-3	0.27	6.0
bis(2-Chloroethoxy)-methane	111-91-1	0.036	7.2
bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
Chloroform	67-66-3	0.046	6.0
bis(2-Chloroisopropyl)-ether	39638-32-9	0.055	7.2

		p-Chloro-m-cresol	59-50-7	0.018	14
		Chloromethane (Methyl chloride)	74-87-3	0.19	30
		2-Chloronaphthalene	91-58-7	0.055	5.6
		2-Chlorophenol	95-57-8	0.044	5.7
		3-Chloropropylene	107-05-1	0.036	30
		Chrysene	218-01-9	0.059	3.4
		p-Cresidine	120-71-8	0.010	0.66
		o-Cresol	95-48-7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
		Cyclohexanone	108-94-1	0.36	NA
		1,2-Dibromo-3-chloropropane	96-12-8	0.11	15
		Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.028	15
		Dibromomethane	74-95-3	0.11	15
		2,4-D (2,4-Dichlorophenoxyacetic acid)	94-75-7	0.72	10

o,p'-DDD	53-19-0	0.023	0.087
p,p'-DDD	72-54-8	0.023	0.087
o,p'-DDE	3424-82-6	0.031	0.087
p,p'-DDE	72-55-9	0.031	0.087
o,p'-DDT	789-02-6	0.0039	0.087
p,p'-DDT	50-29-3	0.0039	0.087
Dibenz(a,h)-anthracene	53-70-3	0.055	8.2
Dibenz(a,e)pyrene	192-65-4	0.061	NA
m-Dichlorobenzene	541-73-1	0.036	6.0
o-Dichlorobenzene	95-50-1	0.088	6.0
p-Dichlorobenzene	106-46-7	0.090	6.0
Dichlorodifluoro-methane	75-71-8	0.23	7.2
1,1-Dichloroethane	75-34-3	0.059	6.0
1,2-Dichloroethane	107-06-2	0.21	6.0
1,1-Dichloroethylene	75-35-4	0.025	6.0
trans-1,2-Dichloroethylene	156-60-5	0.054	30
2,4-Dichlorophenol	120-83-2	0.044	14
2,6-Dichlorophenol	87-65-0	0.044	14

1,2-Dichloropropane	78-87-5	0.85	18
cis-1,3-Dichloropropylene	10061-01-5	0.036	18
trans-1,3-Dichloropropylene	10061-02-6	0.036	18
Dieldrin	60-57-1	0.017	0.13
Diethyl phthalate	84-66-2	0.20	28
2, 4-Dimethylaniline (2, 4-xylidine)	95-68-1	0.010	0.66
2-4-Dimethyl phenol	105-67-9	0.036	14
Dimethyl phthalate	131-11-3	0.047	28
Di-n-butyl phthalate	84-74-2	0.057	28
1,4-Dinitrobenzene	100-25-4	0.32	2.3
4,6-Dinitro-o-cresol	534-52-1	0.28	160
2,4-Dinitrophenol	51-28-5	0.12	160
2,4-Dinitrotoluene	121-14-2	0.32	140
2,6-Dinitrotoluene	606-20-2	0.55	28
Di-n-octyl phthalate	117-84-0	0.017	28
Di-n-propylnitrosamine	621-64-7	0.40	14
1,4-Dioxane	123-91-1	12.0	170

Diphenylamine (difficult to distinguish from diphenylnitro-samine)	122-39-4	0.92	NA
Diphenylnitro-samine (difficult to distinguish from diphenylamine)	86-30-6	0.92	NA
1,2-Diphenylhydrazine	122-66-7	0.087	NA
Disulfoton	298-04-4	0.017	6.2
Endosulfan I	939-98-8	0.023	0.066
Endosulfan II	33213-6-5	0.029	0.13
Endosulfan sulfate	1031-07-8	0.029	0.13
Endrin	72-20-8	0.0028	0.13
Endrin aldehyde	7421-93-4	0.025	0.13
Ethyl acetate	141-78-6	0.34	33
Ethyl cyanide (Propanenitrile)	107-12-0	0.24	360
Ethyl benzene	100-41-4	0.057	10
Ethyl ether	60-29-7	0.12	160
bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
Ethyl methacrylate	97-63-2	0.14	160

Ethylene oxide	75-21-8	0.12	NA
Famphur	52-85-7	0.017	15
Fluoranthene	206-44-0	0.068	3.4
Fluorene	86-73-7	0.059	3.4
Heptachlor	76-44-8	0.0012	0.066
Heptachlor epoxide	1024-57-3	0.016	0.066
1, 2, 3, 4, 6, 7, 8-Heptachlorodibenzo-p-dioxin (1, 2, 3, 4, 6, 7, 8-HpCDD)	35822-46-9	0.000035	0.0025
1, 2, 3, 4, 6, 7, 8-Heptachlorodibenzofuran (1, 2, 3, 4, 6, 7, 8-HpCDF)	67562-39-4	0.000035	0.0025
1, 2, 3, 4, 7, 8, 9-Heptachlorodibenzofuran (1, 2, 3, 4, 7, 8, 9-HpCDF)	55673-89-7	0.000035	0.0025
Hexachloro-benzene	118-74-1	0.055	10
Hexachloro-butadiene	87-68-3	0.055	5.6
Hexachloro-cyclopentadiene	77-47-4	0.057	2.4
HxCDDs (All Hexachloro-dibenzo-p-dioxins)	NA	0.000063	0.001
HxCDFs (All Hexachloro-dibenzofurans)	NA	0.000063	0.001
Hexachloroethane	67-72-1	0.055	30
Hexachloro--propylene	1888-71-7	0.035	30

Indeno (1,2,3-c,d) pyrene	193-39-5	0.0055	3.4
Iodomethane	74-88-4	0.19	65
Isobutyl alcohol	78-83-1	5.6	170
Isodrin	465-73-6	0.021	0.066
Isosafrole	120-58-1	0.081	2.6
Kepone	143-50-8	0.0011	0.13
Methacrylonitrile	126-98-7	0.24	84
Methanol	67-56-1	5.6	NA
Methapyrilene	91-80-5	0.081	1.5
Methoxychlor	72-43-5	0.25	0.18
3-Methylchol-anthrene	56-49-5	0.0055	15
4,4-Methylene bis(2-chloroaniline)	101-14-4	0.50	30
Methylene chloride	75-09-2	0.089	30
Methyl ethyl ketone	78-93-3	0.28	36
Methyl isobutyl ketone	108-10-1	0.14	33
Methyl methacrylate	80-62-6	0.14	160
Methyl methansulfonate	66-27-3	0.018	NA

Methyl parathion	298-00-0	0.014	4.6
Naphthalene	91-20-3	0.059	5.6
2-Naphthylamine	91-59-8	0.52	NA
p-Nitroaniline	100-01-6	0.028	28
Nitrobenzene	98-95-3	0.068	14
5-Nitro-o-toluidine	99-55-8	0.32	28
p-Nitrophenol	100-02-7	0.12	29
N-Nitrosodiethylamine	55-18-5	0.40	28
N-Nitro-sodimethylamine	62-75-9	0.40	NA
N-Nitroso-di-n-butylamine	924-16-3	0.40	17
N-Nitro-somethylethyl-amine	10595-95-6	0.40	2.3
N-Nitrosomorpholine	59-89-2	0.40	2.3
N-Nitrosopiperidine	100-75-4	0.013	35
N-Nitrosopyrrolidine	930-55-2	0.013	35
1, 2, 3, 4, 6, 7, 8, 9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	0.000063	0.0025

1, 2, 3, 4, 6, 7, 8, 9-Octachlorodibenzofuran(OCDF)	39001-02-0	0.000063	0.005
Parathion	56-38-2	0.014	4.6
Total PCBs (sum of all PCB isomers, or all Aroclors)	1336-36-3	0.10	10
Pentachloro-benzene	608-93-5	0.055	10
PeCDDs (All Pentachloro-dibenzo-p-dioxins)	NA	0.000063	0.001
PeCDFs (All Pentachloro-dibenzofurans)	NA	0.000035	0.001
Pentachloro-nitrobenzene	82-68-8	0.055	4.8
Pentachlorophenol	87-86-5	0.089	7.4
Phenacetin	62-44-2	0.081	16
Phenanthrene	85-01-8	0.059	5.6
Phenol	108-95-2	0.039	6.2
1, 3-Phenylenediamine	108-45-2	0.010	0.66
Phorate	298-02-2	0.021	4.6
Phthalic anhydride	85-44-9	0.055	NA
Pronamide	23950-58-5	0.093	1.5
Pyrene	129-00-0	0.067	8.2

Pyridine	110-86-1	0.014	16
Safrole	94-59-7	0.081	22
Silvex (2,4,5-TP)	93-72-1	0.72	7.9
2,4,5-T	93-76-5	0.72	7.9
1,2,4,5-Tetrachloro-benzene	95-94-3	0.055	14
TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
TCDFs (All Tetrachlorodibenzo-furans)	NA	0.000063	0.001
1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
1,1,2,2-Tetrachloroethane	79-34-6	0.057	6.0
Tetrachloroethylene	127-18-4	0.056	6.0
2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4
Toluene	108-88-3	0.080	10
Toxaphene	8001-35-2	0.0095	2.6
Bromoform (Tribromomethane)	75-25-2	0.63	15
1,2,4-Trichlorobenzene	120-82-1	0.055	19
1,1,1-Trichloroethane	71-55-6	0.054	6.0

1,1,2-Trichloroethane	79-00-5	0.054	6.0
Trichloroethylene	79-01-6	0.054	6.0
Trichloromono-fluoromethane	75-69-4	0.020	30
2,4,5-Trichlorophenol	95-95-4	0.18	7.4
2,4,6-Trichlorophenol	88-06-2	0.035	7.4
1,2,3-Trichloropropane	96-18-4	0.85	30
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.057	30
tris(2,3-Dibromopropyl) phosphate	126-72-7	0.11	NA
Vinyl chloride	75-01-4	0.27	6.0
Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
Antimony	7440-36-0	1.9	1.15 mg/l TCLP
Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
Barium	7440-39-3	1.2	21 mg/l TCLP
Beryllium	7440-41-7	0.82	NA
Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP

		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	NA
		Fluoride	16964-48-8	35	NA
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Mercury	7439-97-6	0.15	0.025 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
		Selenium	7782-49-2	0.82	5.7 mg/l TCLP
		Silver	7440-22-4	0.43	0.14 mg/l TCLP
		Sulfide	8496-25-8	14	NA
		Thallium	7440-28-0	1.4	NA
		Vanadium	7440-62-2	4.3	NA
K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.	Naphthalene	91-20-3	0.059	5.6
		Pentachlorophenol	87-86-5	0.089	7.4
		Phenanthrene	85-01-8	0.059	5.6
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.080	10

		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K003	Wastewater treatment sludge from the production of molybdate orange pigments.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K004	Wastewater treatment sludge from the production of zinc yellow pigments.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K005	Wastewater treatment sludge from the production of chrome green pigments.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous).	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP

	Wastewater treatment sludge from the production of chrome oxide green pigments (hydrated).	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	NA
K007	Wastewater treatment sludge from the production of iron blue pigments.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
K008	Oven residue from the production of chrome oxide green pigments.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K009	Distillation bottoms from the production of acetaldehyde from ethylene.	Chloroform	67-66-3	0.046	6.0
K010	Distillation side cuts from the production of acetaldehyde from ethylene.	Chloroform	67-66-3	0.046	6.0
K011	Bottom stream from the wastewater stripper in the production of acrylonitrile.	Acetonitrile	75-05-8	5.6	38
		Acrylonitrile	107-13-1	0.24	84
		Acrylamide	79-06-1	19	23
		Benzene	71-43-2	0.14	10
		Cyanide (Total)	57-12-5	1.2	590
K013	Bottom stream from the acetonitrile column in the production of acrylonitrile.	Acetonitrile	75-05-8	5.6	38

		Acrylonitrile	107-13-1	0.24	84
		Acrylamide	79-06-1	19	23
		Benzene	71-43-2	0.14	10
		Cyanide (Total)	57-12-5	1.2	590
K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile.	Acetonitrile	75-05-8	5.6	38
		Acrylonitrile	107-13-1	0.24	84
		Acrylamide	79-06-1	19	23
		Benzene	71-43-2	0.14	10
		Cyanide (Total)	57-12-5	1.2	590
K015	Still bottoms from the distillation of benzyl chloride.	Anthracene	120-12-7	0.059	3.4
		Benzal chloride	98-87-3	0.055	6.0
		Benzo(b)fluor-anthene (difficult to distinguish from benzo(k)fluor-anthene)	205-99-2	0.11	6.8
		Benzo(k)fluor-anthene (difficult to distinguish from benzo(b)fluor-anthene)	207-08-9	0.11	6.8
		Phenanthrene	85-01-8	0.059	5.6

		Toluene	108-88-3	0.080	10
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
K016	Heavy ends or distillation residues from the production of carbon tetrachloride.	Hexachlorobenzene	118-74-1	0.055	10
		Hexachloro-butadiene	87-68-3	0.055	5.6
		Hexachloro-cyclopentadiene	77-47-4	0.057	2.4
		Hexachloroethane	67-72-1	0.055	30
		Tetrachloroethylene	127-18-4	0.056	6.0
K017	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.	bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
		1,2-Dichloropropane	78-87-5	0.85	18
		1,2,3-Trichloropropane	96-18-4	0.85	30
K018	Heavy ends from the fractionation column in ethyl chloride production.	Chloroethane	75-00-3	0.27	6.0
		Chloromethane	74-87-3	0.19	NA
		1,1-Dichloroethane	75-34-3	0.059	6.0
		1,2-Dichloroethane	107-06-2	0.21	6.0
		Hexachlorobenzene	118-74-1	0.055	10

		Hexachloro-butadiene	87-68-3	0.055	5.6
		Hexachloroethane	67-72-1	0.055	30
		Pentachloroethane	76-01-7	NA	6.0
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.	bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
		Chlorobenzene	108-90-7	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		p-Dichlorobenzene	106-46-7	0.090	NA
		1,2-Dichloroethane	107-06-2	0.21	6.0
		Fluorene	86-73-7	0.059	NA
		Hexachloroethane	67-72-1	0.055	30
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	NA
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
		1,1,1-Trichloroethane	71-55-6	0.054	6.0

K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.	1,2-Dichloroethane	107-06-2	0.21	6.0
		1,1,2,2-Tetrachloroethane	79-34-6	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
K021	Aqueous spent antimony catalyst waste from fluoromethanes production.	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Antimony	7440-36-0	1.9	1.15 mg/l TCLP
K022	Distillation bottom tars from the production of phenol/acetone from cumene.	Toluene	108-88-3	0.080	10
		Acetophenone	96-86-2	0.010	9.7
		Diphenylamine (difficult to distinguish from diphenylnitro-samine)	122-39-4	0.92	13
		Diphenylnitro-samine (difficult to distinguish from diphenylamine)	86-30-6	0.92	13
		Phenol	108-95-2	0.039	6.2
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP

K023	Distillation light ends from the production of phthalic anhydride from naphthalene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	100-21-0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	85-44-9	0.055	28
K024	Distillation bottoms from the production of phthalic anhydride from naphthalene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	100-21-0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	85-44-9	0.055	28
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.	NA	NA	LLEXT fb SSTRP fb CARBN; or CMBST	CMBST
K026	Stripping still tails from the production of methyl ethyl pyridines.	NA	NA	CMBST	CMBST
K027	Centrifuge and distillation residues from toluene diisocyanate production.	NA	NA	CARBN; or CMBST	CMBST
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.	1,1-Dichloroethane	75-34-3	0.059	6.0
		trans-1,2-Dichloroethylene	156-60-5	0.054	30
		Hexachlorobutadiene	87-68-3	0.055	5.6

		Hexachloroethane	67-72-1	0.055	30
		Pentachloroethane	76-01-7	NA	6.0
		1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
		1,1,2,2-Tetrachloroethane	79-34-6	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Cadmium	7440-43-9	0.69	NA
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane.	Chloroform	67-66-3	0.046	6.0
		1,2-Dichloroethane	107-06-2	0.21	6.0
		1,1-Dichloroethylene	75-35-4	0.025	6.0
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
		Vinyl chloride	75-01-4	0.27	6.0

K030	Column bodies or heavy ends from the combined production of trichloroethylene and perchloroethylene.	o-Dichlorobenzene	95-50-1	0.088	NA
		p-Dichlorobenzene	106-46-7	0.090	NA
		Hexachlorobutadiene	87-68-3	0.055	5.6
		Hexachloroethane	67-72-1	0.055	30
		Hexachloropropylene	1888-71-7	NA	30
		Pentachlorobenzene	608-93-5	NA	10
		Pentachloroethane	76-01-7	NA	6.0
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
K031	By-product salts generated in the production of MSMA and cacodylic acid.	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
K032	Wastewater treatment sludge from the production of chlordane.	Hexachlorocyclo-pentadiene	77-47-4	0.057	2.4
		Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
		Heptachlor	76-44-8	0.0012	0.066
		Heptachlor epoxide	1024-57-3	0.016	0.066

K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.	Hexachlorocyclo-pentadiene	77-47-4	0.057	2.4
K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.	Hexachlorocyclo-pentadiene	77-47-4	0.057	2.4
K035	Wastewater treatment sludges generated in the production of creosote.	Acenaphthene	83-32-9	NA	3.4
		Anthracene	120-12-7	NA	3.4
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Chrysene	218-01-9	0.059	3.4
		o-Cresol	95-48-7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
		Dibenz(a,h)-anthracene	53-70-3	NA	8.2
		Fluoranthene	206-44-0	0.068	3.4
		Fluorene	86-73-7	NA	3.4
		Indeno(1,2,3-cd)pyrene	193-39-5	NA	3.4

		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
K036	Still bottoms from toluene reclamation distillation in the production of disulfoton.	Disulfoton	298-04-4	0.017	6.2
K037	Wastewater treatment sludges from the production of disulfoton.	Disulfoton	298-04-4	0.017	6.2
		Toluene	108-88-3	0.080	10
K038	Wastewater from the washing and stripping of phorate production.	Phorate	298-02-2	0.021	4.6
K039	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.	NA	NA	CARBN; or CMBST	CMBST
K040	Wastewater treatment sludge from the production of phorate.	Phorate	298-02-2	0.021	4.6
K041	Wastewater treatment sludge from the production of toxaphene.	Toxaphene	8001-35-2	0.0095	2.6
K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.	o-Dichlorobenzene	95-50-1	0.088	6.0
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Pentachlorobenzene	608-93-5	0.055	10

		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
K043	2,6-Dichlorophenol waste from the production of 2,4-D.	2,4-Dichlorophenol	120-83-2	0.044	14
		2,6-Dichlorophenol	187-65-0	0.044	14
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4
		Pentachlorophenol	87-86-5	0.089	7.4
		Tetrachloroethylene	127-18-4	0.056	6.0
		HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzo-furans)	NA	0.000063	0.001

K044	Wastewater treatment sludges from the manufacturing and processing of explosives.	NA	NA	DEACT	DEACT
K045	Spent carbon from the treatment of wastewater containing explosives.	NA	NA	DEACT	DEACT
K046	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.	Lead	7439-92-1	0.69	0.75 mg/l TCLP
K047	Pink/red water from TNT operations	NA	NA	DEACT	DEACT
K048	Dissolved air flotation (DAF) float from the petroleum refining industry.	Benzene	71-43-2	0.14	10
		Benzo(a)pyrene	50-32-8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Chrysene	218-01-9	0.059	3.4
		Di-n-butyl phthalate	84-74-2	0.057	28
		Ethylbenzene	100-41-4	0.057	10
		Fluorene	86-73-7	0.059	NA
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2

		Toluene	108-88-33	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	11 mg/l TCLP
K049	Slop oil emulsion solids from the petroleum refining industry.	Anthracene	120-12-7	0.059	3.4
		Benzene	71-43-2	0.14	10
		Benzo(a)pyrene	50-32-8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Carbon disulfide	75-15-0	3.8	NA
		Chrysene	218-01-9	0.059	3.4
		2,4-Dimethylphenol	105-67-9	0.036	NA
		Ethylbenzene	100-41-4	0.057	10
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2

		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Cyanides (Total)[7]	57-12-5	1.2	590
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	11 mg/l TCLP
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry.	Benzo(a)pyrene	50-32-8	0.061	3.4
		Phenol	108-95-2	0.039	6.2
		Cyanides (Total)[7]	57-12-5	1.2	590
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	11 mg/l TCLP
K051	API separator sludge from the petroleum refining industry.	Acenaphthene	83-32-9	0.059	NA
		Anthracene	120-12-7	0.059	3.4
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzene	71-43-2	0.14	10

		Benzo(a)pyrene	50-32-8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Chrysene	218-01-9	0.059	3.4
		Di-n-butyl phthalate	105-67-9	0.057	28
		Ethylbenzene	100-41-4	0.057	10
		Fluorene	86-73-7	0.059	NA
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.08	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Cyanides (Total)[7]	57-12-5	1.2	590
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	11 mg/l TCLP
K052	Tank bottoms (leaded) from the petroleum refining industry.	Benzene	71-43-2	0.14	10

Benzo(a)pyrene	50-32-8	0.061	3.4
o-Cresol	95-48-7	0.11	5.6
m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
2,4-Dimethylphenol	105-67-9	0.036	NA
Ethylbenzene	100-41-4	0.057	10
Naphthalene	91-20-3	0.059	5.6
Phenanthrene	85-01-8	0.059	5.6
Phenol	108-95-2	0.039	6.2
Toluene	108-88-3	0.08	10
Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
Cyanides (Total)[7]	57-12-5	1.2	590
Lead	7439-92-1	0.69	NA
Nickel	7440-02-0	NA	11 mg/l TCLP

K060	Ammonia still lime sludge from coking operations.	Benzene	71-43-2	0.14	10
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Naphthalene	91-20-3	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Cyanides (Total)[7]	57-12-5	1.2	590
K061	Emission control dust/sludge from the primary production of steel in electric furnaces.	Antimony	7440-36-0	NA	1.15 mg/l TCLP
		Arsenic	7440-38-2	NA	5.0 mg/l TCLP
		Barium	7440-39-3	NA	21 mg/l TCLP
		Beryllium	7440-41-7	NA	1.22 mg/l TCLP
		Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Mercury	7439-97-6	NA	0.025 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
		Selenium	7782-49-2	NA	5.7 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP
		Thallium	7440-28-0	NA	0.20 mg/l TCLP

		Zinc	7440-66-6	NA	4.3 mg/l TCLP
K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	NA
K069	Emission control dust/sludge from secondary lead smelting. - Calcium Sulfate (Low Lead) Subcategory	Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
	Emission control dust/sludge from secondary lead smelting. - Non-Calcium Sulfate (High Lead) Subcategory	NA	NA	NA	RLEAD
K071	K071 (Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used) nonwastewaters that are residues from RMERC.	Mercury	7439-97-6	NA	0.20 mg/l TCLP
	K071 (Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.) nonwastewaters that are not residues from RMERC.	Mercury	7439-97-6	NA	0.025 mg/l TCLP
	All K071 wastewaters.	Mercury	7439-97-6	0.15	NA

K073	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Hexachloroethane	67-72-1	0.055	30
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
K083	Distillation bottoms from aniline production.	Aniline	62-53-3	0.81	14
		Benzene	71-43-2	0.14	10
		Cyclohexanone	108-94-1	0.36	NA
		Diphenylamine (difficult to distinguish from diphenylnitro-samine)	122-39-4	0.92	13
		Diphenylnitro-samine (difficult to distinguish from diphenylamine)	86-30-6	0.92	13
		Nitrobenzene	98-95-3	0.068	14
		Phenol	108-95-2	0.039	6.2
		Nickel	7440-02-0	3.98	11 mg/l TCLP

K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
K085	Distillation or fractionation column bottoms from the production of chlorobenzenes.	Benzene	71-43-2	0.14	10
		Chlorobenzene	108-90-7	0.057	6.0
		m-Dichlorobenzene	541-73-1	0.036	6.0
		o-Dichlorobenzene	95-50-1	0.088	6.0
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Hexachlorobenzene	118-74-1	0.055	10
		Total PCBs (sum of all PCB isomers, or all Aroclors)	1336-36-3	0.10	10
		Pentachlorobenzene	608-93-5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
K086	Solvent wastes 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.	Acetone	67-64-1	0.28	160

Acetophenone	96-86-2	0.010	9.7
bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
n-Butyl alcohol	71-36-3	5.6	2.6
Butylbenzyl phthalate	85-68-7	0.017	28
Cyclohexanone	108-94-1	0.36	NA
o-Dichlorobenzene	95-50-1	0.088	6.0
Diethyl phthalate	84-66-2	0.20	28
Dimethyl phthalate	131-11-3	0.047	28
Di-n-butyl phthalate	84-74-2	0.057	28
Di-n-octyl phthalate	117-84-0	0.017	28
Ethyl acetate	141-78-6	0.34	33
Ethylbenzene	100-41-4	0.057	10
Methanol	67-56-1	5.6	NA
Methyl ethyl ketone	78-93-3	0.28	36
Methyl isobutyl ketone	108-10-1	0.14	33
Methylene chloride	75-09-2	0.089	30
Naphthalene	91-20-3	0.059	5.6
Nitrobenzene	98-95-3	0.068	14

		Toluene	108-88-3	0.080	10
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K087	Decanter tank tar sludge from coking operations.	Acenaphthylene	208-96-8	0.059	3.4
		Benzene	71-43-2	0.14	10
		Chrysene	218-01-9	0.059	3.4
		Fluoranthene	206-44-0	0.068	3.4
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30

		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K088	Spent potliners from primary aluminum reduction.	Acenaphthene	83-32-9	0.059	3.4
		Anthracene	120-12-7	0.059	3.4
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluor-anthene	205-99-2	0.11	6.8
		Benzo(k)fluor-anthene	207-08-9	0.11	6.8
		Benzo(g,h,i)-perylene	191-24-2	0.0055	1.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)-anthracene	53-70-3	0.055	8.2
		Fluoranthene	206-44-0	0.068	3.4
		Indeno(1,2,3,-cd)pyrene	193-39-5	0.0055	3.4
		Penanthrene	85-01-8	0.059	5.6
		Pyrene	129-00-0	0.067	8.2
		Antimony	7440-36-0	1.9	1.15 mg/l TCLP
		Arsenic	7440-38-2	1.4	26.1 mg/kg
		Barium	7440-39-3	1.2	21 mg/l TCLP
		Beryllium	7440-41-7	0.82	1.22 mg/l TCLP

		Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Mercury	7439-97-6	0.15	0.025 mg/l TCLP
		Nickel	7440-02-0	3.98	11.0 mg/l TCLP
		Selenium	7782-49-2	0.82	5.7 mg/l TCLP
		Silver	7440-22-4	0.43	0.14 mg/l TCLP
		Cyanide (Total)[7]	57-12-5	1.2	590
		Cyanide (Amenable)[7]	57-12-5	0.86	30
		Fluoride	16984-48-8	35	NA
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	100-21-0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	85-44-9	0.055	28
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	100-21-0	0.055	28

		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	85-44-9	0.055	28
K095	Distillation bottoms from the production of 1,1,1-trichloroethane.	Hexachloroethane	67-72-1	0.055	30
		Pentachloroethane	76-01-7	0.055	6.0
		1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
		1,1,2,2-Tetrachloroethane	79-34-6	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.	m-Dichlorobenzene	541-73-1	0.036	6.0
		Pentachloroethane	76-01-7	0.055	6.0
		1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
		1,1,2,2-Tetrachloroethane	79-34-6	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
		1,1,2-Trichloroethane	79-00-5	0.054	6.0

		Trichloroethylene	79-01-6	0.054	6.0
K097	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.	Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
		Heptachlor	76-44-8	0.0012	0.066
		Heptachlor epoxide	1024-57-3	0.016	0.066
		Hexachloro-cyclopentadiene	77-47-4	0.057	2.4
K098	Untreated process wastewater from the production of toxaphene.	Toxaphene	8001-35-2	0.0095	2.6
K099	Untreated wastewater from the production of 2,4-D.	2,4-Dichloropheno-xyacetic acid	94-75-7	0.72	10
		HxCDDs (All Hexachloro-dibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Pentachloro-dibenzofurans)	NA	0.000035	0.001
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzo-furans)	NA	0.000063	0.001

K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	o-Nitroaniline	88-74-4	0.27	14
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Cadmium	7440-43-9	0.69	NA
		Lead	7439-92-1	0.69	NA
		Mercury	7439-97-6	0.15	NA
K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	o-Nitrophenol	88-75-5	0.028	13
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Cadmium	7440-43-9	0.69	NA
		Lead	7439-92-1	0.69	NA
		Mercury	7439-97-6	0.15	NA

K103	Process residues from aniline extraction from the production of aniline.	Aniline	62-53-3	0.81	14
		Benzene	71-43-2	0.14	10
		2,4-Dinitrophenol	51-28-5	0.12	160
		Nitrobenzene	98-95-3	0.068	14
		Phenol	108-95-2	0.039	6.2
K104	Combined wastewater streams generated from nitrobenzene/ aniline production.	Aniline	62-53-3	0.81	14
		Benzene	71-43-2	0.14	10
		2,4-Dinitrophenol	51-28-5	0.12	160
		Nitrobenzene	98-95-3	0.068	14
		Phenol	108-95-2	0.039	6.2
		Cyanides (Total)[7]	57-12-5	1.2	590
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.	Benzene	71-43-2	0.14	10
		Chlorobenzene	108-90-7	0.057	6.0
		2-Chlorophenol	95-57-8	0.044	5.7
		o-Dichlorobenzene	95-50-1	0.088	6.0
		p-Dichlorobenzene	106-46-7	0.090	6.0

		Phenol	108-95-2	0.039	6.2
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
K106	K106 (wastewater treatment sludge from the mercury cell process in chlorine production) nonwastewaters that contain greater than or equal to 260 mg/kg total mercury.	Mercury	7439-97-6	NA	RMERC
	K106 (wastewater treatment sludge from the mercury cell process in chlorine production) nonwastewaters that contain less than 260 mg/kg total mercury that are residues from RMERC.	Mercury	7439-97-6	NA	0.20 mg/l TCLP
	Other K106 nonwastewaters that contain less than 260 mg/kg total mercury and are not residues from RMERC.	Mercury	7439-97-6	NA	0.025 mg/l TCLP
	All K106 wastewaters.	Mercury	7439-97-6	0.15	NA
K107	Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST

K108	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K109	Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K110	Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K111	Product washwaters from the production of dinitrotoluene via nitration of toluene	2,4-Dinitrotoluene	121-14-2	0.32	140
		2,6-Dinitrotoluene	606-20-2	0.55	28
K112	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K113	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	NA	NA	CARBN; OR CMBST	CMBST

K114	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	NA	NA	CARBN; or CMBST	CMBST
K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	Nickel	7440-02-0	3.98	11 mg/l TCLP
		NA	NA	CARBN; or CMBST	CMBST
K116	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.	NA	NA	CARBN; or CMBST	CMBST
K117	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene.	Methyl bromide (Bromomethane)	74-83-9	0.11	15
		Chloroform	67-66-3	0.046	6.0
		Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.028	15
K118	Spent absorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	Methyl bromide (Bromomethane)	74-83-9	0.11	15
		Chloroform	67-66-3	0.046	6.0
		Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.028	15

K123	Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K124	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K125	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K126	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K131	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide.	Methyl bromide (Bromomethane)	74-83-9	0.11	15
K132	Spent absorbent and wastewater separator solids from the production of methyl bromide.	Methyl bromide (Bromomethane)	74-83-9	0.11	15
K136	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	Methyl bromide (Bromomethane)	74-83-9	0.11	15
		Chloroform	67-66-3	0.046	6.0
		Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.028	15

K141	Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludge from coking operations).	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-2-8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4
K142	Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal.	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4

		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluor-anthene (difficult to distinguish from benzo(k)fluor-anthene)	205-99-2	0.11	6.8
		Benzo(k)fluor-anthene (difficult to distinguish from benzo(b)fluor-anthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthra-cene	53-70-3	0.055	8.2
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4
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.	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluor-anthene (difficult to distinguish from benzo(k)fluor-anthene)	205-99-2	0.11	6.8

		Benzo(k)flour-anthene (difficult to distinguish from benzo(b)fluor-anthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
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.	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluor-anthene (difficult to distinguish from benzo(k)fluor-anthene)	205-99-2	0.11	6.8
		Benzo(k)fluor-anthene (difficult to distinguish from benzo(b)fluor-anthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthra-cene	53-70-3	0.055	8.2
K145	Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.	Benzene	71-43-2	0.14	10

		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Naphthalene	91-20-3	0.059	5.6
K147	Tar storage tank residues from coal tar refining.	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluor-anthene (difficult to distinguish from benzo(k)fluor-anthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthra-cene	53-70-3	0.055	8.2
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4
K148	Residues from coal tar distillation, including, but not limited to, still bottoms.	Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4

		Benzo(b)fluor-anthene (difficult to distinguish from benzo(k)fluor-anthene)	205-99-2	0.11	6.8
		Benzo(k)fluor-anthene (difficult to distinguish from benzo(b)fluor-anthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthra-cene	53-70-3	0.055	8.2
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4
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 distillations of benzyl chloride.)	Chlorobenzene	108-90-7	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Chloromethane	74-87-3	0.19	30
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Hexachlorobenzene	118-74-1	0.055	10
		Pentachlorobenzene	608-93-5	0.055	10

		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		Toluene	108-88-3	0.080	10
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.	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Chloromethane	74-87-3	0.19	30
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Hexachlorobenzene	118-74-1	0.055	10
		Pentachlorobenzene	608-93-5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		1,1,2,2-Tetrachloroethane	79-34-5	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,2,4-Trichlorobenzene	120-82-1	0.055	19

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.	Benzene	71-43-2	0.14	10
		Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Hexachlorobenzene	118-74-1	0.055	10
		Pentachlorobenzene	608-93-5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		Tetrachloroethylene	127-18-4	0.056	6.0
		Toluene	108-88-3	0.080	10
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes.[10]	Acetonitrile	75-05-8	5.6	1.8
		Acetophenone	98-86-2	0.010	9.7
		Aniline	62-53-3	0.81	14
		Benomyl	17804-35-2	0.056	1.4

		Benzene	71-43-2	0.14	10
		Carbaryl	63-25-2	0.006	0.14
		Carbenzadim	10605-21-7	0.056	1.4
		Carbofuran	1563-66-2	0.006	0.14
		Carbosulfan	55285-14-8	0.028	1.4
		Chlorobenzene	108-90-7	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		o-Dichlorobenzene	95-50-1	0.088	6.0
		Methomyl	16752-77-5	0.028	0.14
		Methylene chloride	75-09-2	0.089	30
		Methyl ethyl ketone	78-93-3	0.28	36
		Naphthalene	91-20-3	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyridine	110-86-1	0.014	16
		Toluene	108-88-3	0.080	10
		Triethylamine	121-44-8	0.081	1.5

K157	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes.	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Chloromethane	74-87-3	0.19	30
		Methomyl	16752-77-5	0.028	0.14
		Methylene chloride	75-09-2	0.089	30
		Methyl ethyl ketone	78-93-3	0.28	36
		Pyridine	110-86-1	0.014	16
		Triethylamine	121-44-8	0.081	1.5
K158	Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes.	Benomyl	17804-35-2	0.056	1.4
		Benzene	71-43-2	0.14	10
		Carbenzadim	10605-21-7	0.056	1.4
		Carbofuran	1563-66-2	0.006	0.14
		Carbosulfan	55285-14-8	0.028	1.4
		Chloroform	67-66-3	0.046	6.0
		Methylene chloride	75-09-2	0.089	30
		Phenol	108-95-2	0.039	6.2

K159	Organics from the treatment of thiocarbamate wastes.[10]	Benzene	71-43-2	0.14	10
		Butylate	2008-41-5	0.042	1.4
		EPTC (Eptam)	759-94-4	0.042	1.4
		Molinate	2212-67-1	0.042	1.4
		Pebulate	1114-71-2	0.042	1.4
		Vernolate	1929-77-7	0.042	1.4
K161	Purification solids (including filtration, evaporation, and centrifugation solids), baghouse dust and floor sweepings from the production of dithiocarbamate acids and their salts.	Antimony	7440-36-0	1.9	[11]1.15
		Arsenic	7440-38-2	1.4	[11]5.0
		Carbon disulfide	75-15-0	3.8	[11]4.8
		Dithiocarbamates (total)	137-30-4	0.028	28
		Lead	7439-92-1	0.69	[11]0.75
		Nickel	7440-02-0	3.98	[11]11
		Selenium	7782-49-2	0.82	[11]5.7
K169	Crude oil tank sediment from petroleum refining operations.	Benz(a)anthracene	56-55-3	0.059	3.4

Benzene	71-43-2	0.14	10
Benzo(g,h,i)-perylene	191-24-2	0.0055	1.8
Chrysene	218-01-9	0.059	3.4
Ethyl benzene	100-41-4	0.057	10
Fluorene	86-73-7	0.059	3.4
Naphthalene	91-20-3	0.059	5.6
Phenanthrene	81-05-8	0.059	5.6
Pyrene	129-00-0	0.067	8.2
Toluene (Methyl Benzene)	108-88-3	0.080	10
Xylene(s) (Total)	1330-20-7	0.32	30

K170	Clarified slurry oil sediment from petroleum refining operations.	Benz(a)anthracene	56-55-3	0.059	3.4
		Benzene	71-43-2	0.14	10
		Benzo(g,h,i)-perylene	191-24-2	0.0055	1.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)-anthracene	53-70-3	0.055	8.2
		Ethyl benzene	100-41-4	0.057	10
		Fluorene	86-73-7	0.059	3.4
		Indeno(1,2,3,-cd)-pyrene	193-39-5	0.0055	3.4
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	81-05-8	0.059	5.6

		Pyrene	129-00-0	0.067	8.2
		Toluene (Methyl Benzene)	108-88-3	0.080	10
		Xylene(s)(Total)	1330-20-7	0.32	30
K171	Spent hydrotreating catalyst from petroleum refining operations, including guard beds used to desulfurize feed to other catalytic reactors (this listing does not include inert suport media.).	Benz(a)anthracene	56-55-3	.059	34
		Benzene	71-43-2	0.14	10
		Chrysene	218-01-9	0.059	3.4
		Ethyl benzene	100-41-4	0.057	10
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	81-05-8	0.059	5.6

		Pyrene	129-00-0	0.067	8.2
		Toluene (Methyl Benzene)	108-88-3	0.080	10
		Xylene(s) (Total)	1330-20-7	0.32	30
		Arsenic	7740-38-2	1.4	5 mg/l TCLP
		Nickel	7440-02-0	3.98	11.0 mg/l TCLP
		Vanadium	7440-62-2	4.3	1.6 mg/l TCLP
		Reactive sulfides	NA	DEACT	DEACT
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.).	Benzene	71-43-2	0.14	10
		Ethyl benzene	100-41-4	0.057	10

		Toluene (Methyl Benzene)	108-88-3	0.080	10
		Xylene(s) (Total)	1330-20-7	0.32	30
		Antimony	7740-36-0	1.9	1.15 mg/l TCLP
		Arsenic	7740-38-2	1.4	5 mg/l TCLP
		Nickel	7440-02-0	3.98	11.0 mg/l TCLP
		Vanadium	7440-62-2	4.3	1.6 mg/l TCLP
		Reactive Sulfides	NA	DEACT	DEACT
K174	Wastewater treatment sludges from the production of ethylene dichloride or vinyl chloride monomer.	1, 2, 3, 4, 6, 7, 8-Heptachlorodibenzo-p-dioxin (1, 2, 3, 4, 6, 7, 8-HpCDD)	35822-46-9	0.000035 or CMBST[11]	0.0025 or CMBST[11]
		1, 2, 3, 4, 6, 7, 8-Heptachlorodibenzofuran (1, 2, 3, 4, 6, 7, 8-HpCDF)	67562-39-4	0.000035 or CMBST[11]	0.0025 or CMBST[11]
		1, 2, 3, 4, 7, 8, 9-Heptachlorodibenzofuran (1, 2, 3, 4, 7, 8, 9-HpCDF)	55673-89-7	0.000035 or CMBST[11]	0.0025 or CMBST[11]

		HxCDDs (All Hexachlorodibenzo-p-dioxins)	34465-46-8	0.000063 or CMBST[11]	0.001 or CMBST[11]
		HxCDFs (All Hexachlorodibenzofurans)	55684-94-1	0.000063 or CMBST[11]	0.001 or CMBST[11]
		1, 2, 3, 4, 6, 7, 8, 9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	0.000063 or CMBST[11]	0.005 or CMBST[11]
		1, 2, 3, 4, 6, 7, 8, 9-Octachlorodibenzofuran (OCDF)	39001-02-0	0.000063 or CMBST[11]	0.005 or CMBST[11]
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	36088-22-9	0.000063 or CMBST[11]	0.001 or CMBST[11]
		PeCDFs (All Pentachlorodibenzofurans)	30402-15-4	0.000035 or CMBST[11]	0.001 or CMBST[11]
		TCDDs (All Tetrachlorodi-benzo-p-dioxins)	41903-57-5	0.000063 or CMBST[11]	0.001 or CMBST[11]
		TCDFs (All Tetrachlorodibenzofurans)	55722-27-5	0.000063 or CMBST[11]	0.001 or CMBST[11]
		Arsenic	7440-36-0	1.4	5.0 mg/L TCLP
K175	Wastewater treatment sludge from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process.	Mercury[12]	7438-97-6	NA	0.025 mg/L TCLP

		pH[12]		NA	pH ≤6.0
	All K175 wastewaters	Mercury	7438-97-6	0.15	NA
K176	Baghouse filters from the production of antimony oxide, including filters from the production of intermediates (e. g., antimony metal or crude antimony oxide)	Antimony	7440-36-0	1.9	1.15 mg/L TCLP
		Arsenic	7440-38-2	1.4	5.0 mg/L TCLP
		Cadmium	7440-43-9	0.69	0.11 mg/L TCLP
		Lead	7439-92-1	0.69	0.75 mg/L TCLP
		Mercury	7439-97-6	0.15	0.025 mg/L TCLP
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)	Antimony	7440-36-0	1.9	1.15 mg/L TCLP
		Arsenic	7440-38-2	1.4	5.0 mg/L TCLP

		Lead	7439-92-1	0.69	0.75 mg/L TCLP
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	1, 2, 3, 4, 6, 7, 8-Heptachlorodibenzop-dioxin (1, 2, 3, 4, 6, 7, 8-HpCDD)	35822-39-4	0.000035 or CMBST[11]	0.0025 or CMBST[11]
		1, 2, 3, 4, 6, 7, 8-Heptachlorodibenzofuran (1, 2, 3, 4, 6, 7, 8-HpCDF)	67562-39-4	0.000035 or CMBST[11]	0.0025 or CMBST[11]
		1, 2, 3, 4, 7, 8, 9-Heptachlorodibenzofuran (1, 2, 3, 4, 7, 8, 9-HpCDF)	55673-89-7	0.000035 or CMBST[11]	0.0025 or CMBST[11]
		HxCDDs (All Hexachlorodibenzo-p-dioxins)	34465-46-8	0.000063 or CMBST[11]	0.001 or CMBST[11]
		HxCDFs (All Hexachlorodibenzo-furans)	55684-94-1	0.000063 or CMBST[11]	0.001or CMBST[11]
		1, 2, 3, 4, 6, 7, 8, 9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	0.000063 or CMBST[11]	0.005 or CMBST[11]
		1, 2, 3, 4, 6, 7, 8, 9-Octachlorodibenzo-furan (OCDF)	39001-02-0	0.000063 or CMBST[11]	0.005 or CMBST[11]
		PeCDDs (All Pentachlorodibenzop-dioxins)	36088-22-9	0.000063 or CMBST[11]	0.001 or CMBST[11]

		PeCDFs (All Pentachlorodiben-zop-dioxins)	30402-15-4	0.000035 or CMBST[11]	0.001 or CMBST[11]
		TCDDs (All Tetrachlorodibenzo-p-dioxings)	41903-57-5	0.000063 or CMBST[11]	0.001 or CMBST[11]
		TCDFs (All Tetrachlorodibenzo-furans)	55722-27-5	0.000063 or CMBST[11]	0.001 or CMBST[11]
		Thallium	7440-28-0	1.4	0.20 mg/L TCLP
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 Rule 1200-01-11-.02(4)(c) that are equal to or greater than the corresponding part 3 levels, as determined on a calendar year basis.	Aniline	62-53-3	0.81	14
		o-Anisidine (2-methoxyaniline)	90-04-0	0.010	0.66
		4-Chloroaniline	106-47-8	0.46	16

		p-Cresidine	120-71-8	0.010	0.66
		2, 4-Dimethylaniline (2, 4-xylidine)	95-68-1	0.010	0.66
		1, 2-Phenylenediamine	95-54-5	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN
		1, 3-Phenylenediamine	108-45-2	0.010	0.66
P001	Warfarin, & salts, when present at concentrations greater than 0.3%	Warfarin	81-81-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P002	1-Acetyl-2-thiourea	1-Acetyl-2-thiourea	591-08-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P003	Acrolein	Acrolein	107-02-8	0.29	CMBST
P004	Aldrin	Aldrin	309-00-2	0.021	0.066
P005	Allyl alcohol	Allyl alcohol	107-18-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P006	Aluminum phosphide	Aluminum phosphide	20859-73-8	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
P007	5-Aminomethyl 3-isoxazolol	5-Aminomethyl 3-isoxazolol	2763-96-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

P008	4-Aminopyridine	4-Aminopyridine	504-24-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P009	Ammonium picrate	Ammonium picrate	131-74-8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P010	Arsenic acid	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
P011	Arsenic pentoxide	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
P012	Arsenic trioxide	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
P013	Barium cyanide	Barium	7440-39-3	NA	21 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P014	Thiophenol (Benzene thiol)	Thiophenol (Benzene thiol)	108-98-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P015	Beryllium dust	Beryllium	7440-41-7	RMETL; or RTHRM	RMETL; or RTHRM
P016	Dichloromethyl ether (Bis(chloromethyl)ether)	Dichloromethyl ether	542-88-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P017	Bromoacetone	Bromoacetone	598-31-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P018	Brucine	Brucine	357-57-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

P020	2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	88-85-7	0.066	2.5
P021	Calcium cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P022	Carbon disulfide	Carbon disulfide	75-15-0	3.8	CMBST
		Carbon disulfide; alternate[6] standard for nonwastewaters only	75-15-0	NA	4.8 mg/l TCLP
P023	Chloroacetaldehyde	Chloroacetaldehyde	107-20-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P024	p-Chloroaniline	p-Chloroaniline	106-47-8	0.46	16
P026	1-(o-Chlorophenyl)thiourea	1-(o-Chlorophenyl)thiourea	5344-82-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P027	3-Chloropropionitrile	3-Chloropropionitrile	542-76-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P028	Benzyl chloride	Benzyl chloride	100-44-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P029	Copper cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P030	Cyanides (soluble salts and complexes)	Cyanides (Total)[7]	57-12-5	1.2	590

		Cyanides (Amenable)[7]	57-12-5	0.86	30
P031	Cyanogen	Cyanogen	460-19-5	CHOXD; WETOX; or CMBST	CHOXD; WETOX; or CMBST
P033	Cyanogen chloride	Cyanogen chloride	506-77-4	CHOXD; WETOX; or CMBST	CHOXD; WETOX; or CMBST
P034	2-Cyclohexyl-4,6-dinitrophenol	2-Cyclohexyl-4,6-dinitrophenol	131-89-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P036	Dichlorophenylarsine	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
P037	Dieldrin	Dieldrin	60-57-1	0.017	0.13
P038	Diethylarsine	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
P039	Disulfoton	Disulfoton	298-04-4	0.017	6.2
P040	0,0-Diethyl O-pyrazinyl phosphorothioate	0,0-Diethyl O-pyrazinyl phosphorothioate	297-97-2	CARBN; or CMBST	CMBST
P041	Diethyl-p-nitrophenyl phosphate	Diethyl-p-nitrophenyl phosphate	311-45-5	CARBN; or CMBST	CMBST
P042	Epinephrine	Epinephrine	51-43-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P043	Diisopropylfluorophosphate (DFP)	Diisopropylfluoro-phosphate (DFP)	55-91-4	CARBN; or CMBST	CMBST
P044	Dimethoate	Dimethoate	60-51-5	CARBN; or CMBST	CMBST
P045	Thiofanox	Thiofanox	39196-18-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

P046	alpha, alpha-Dimethylphenethylamine	alpha, alpha-Dimethylphenethyl-amine	122-09-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P047	4,6-Dinitro-o-cresol	4,6-Dinitro-o-cresol	543-52-1	0.28	160
	4,6-Dinitro-o-cresol salts	NA	NA	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P048	2,4-Dinitrophenol	2,4-Dinitrophenol	51-28-5	0.12	160
P049	Dithiobiuret	Dithiobiuret	541-53-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P050	Endosulfan	Endosulfan I	939-98-8	0.023	0.066
		Endosulfan II	33213-6-5	0.029	0.13
		Endosulfan sulfate	1031-07-8	0.029	0.13
P051	Endrin	Endrin	72-20-8	0.0028	0.13
		Endrin aldehyde	7421-93-4	0.025	0.13
P054	Aziridine	Aziridine	151-56-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P056	Fluorine	Fluoride (measured in wastewaters only)	16964-48-8	35	ADGAS fb NEUTR
P057	Fluoroacetamide	Fluoroacetamide	640-19-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

P058	Fluoroacetic acid, sodium salt	Fluoroacetic acid, sodium salt	62-74-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P059	Heptachlor	Heptachlor	76-44-8	0.0012	0.066
		Heptachlor epoxide	1024-57-3	0.016	0.066
P060	Isodrin	Isodrin	465-73-6	0.021	0.066
P062	Hexaethyl tetraphosphate	Hexaethyl tetraphosphate	757-58-4	CARBN; or CMBST	CMBST
P063	Hydrogen cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P064	Isocyanic acid, ethyl ester	Isocyanic acid, ethyl ester	624-83-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P065	Mercury fulminate nonwastewaters, regardless of their total mercury content, that are not incinerator residues or are not residues from RMERC.	Mercury	7439-97-6	NA	IMERC
	Mercury fulminate nonwastewaters that are either incinerator residues or are residues from RMERC; and contain greater than or equal to 260 mg/kg total mercury.	Mercury	7439-97-6	NA	RMERC
	Mercury fulminate nonwastewaters that are residues from RMERC and contain less than 260 mg/kg total mercury.	Mercury	7439-97-6	NA	0.20 mg/l TCLP

	Mercury fulminate nonwastewaters that are incinerator residues and contain less than 260 mg/kg total mercury.	Mercury	7439-97-6	NA	0.025 mg/l TCLP
	All mercury fulminate wastewaters.	Mercury	7439-97-6	0.15	NA
P066	Methomyl	Methomyl	16752-77-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P067	2-Methyl-aziridine	2-Methyl-aziridine	75-55-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P068	Methyl hydrazine	Methyl hydrazine	60-34-4	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P069	2-Methyllactonitrile	2-Methyllactonitrile	75-86-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P070	Aldicarb	Aldicarb	116-06-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P071	Methyl parathion	Methyl parathion	298-00-0	0.014	4.6
P072	1-Naphthyl-2-thiourea	1-Naphthyl-2-thiourea	86-88-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P073	Nickel carbonyl	Nickel	7440-02-0	3.98	11 mg/l TCLP
P074	Nickel cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Nickel	7440-02-0	3.98	11 mg/l TCLP

P075	Nicotine and salts	Nicotine and salts	54-11-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P076	Nitric oxide	Nitric oxide	10102-43-9	ADGAS	ADGAS
P077	p-Nitroaniline	p-Nitroaniline	100-01-6	0.028	28
P078	Nitrogen dioxide	Nitrogen dioxide	10102-44-0	ADGAS	ADGAS
P081	Nitroglycerin	Nitroglycerin	55-63-0	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P082	N-Nitrosodimethylamine	N-Nitrosodimethyl-amine	62-75-9	0.40	2.3
P084	N-Nitrosomethylvinylamine	N-Nitrosomethylvinyl-amine	4549-40-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P085	Octamethylpyrophosphoramide	Octamethylpyro-phosphoramide	152-16-9	CARBN; or CMBST	CMBST
P087	Osmium tetroxide	Osmium tetroxide	20816-12-0	RMETL; or RTHRM	RMETL; or RTHRM
P088	Endothall	Endothall	145-73-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P089	Parathion	Parathion	56-38-2	0.014	4.6
P092	Phenyl mercuric acetate nonwastewaters, regardless of their total mercury content, that are not incinerator residues or are not residues from RMERC.	Mercury	7439-97-6	NA	IMERC; or RMERC

	Phenyl mercuric acetate nonwastewaters that are either incinerator residues or are residues from RMERC; and still contain greater than or equal to 260 mg/kg total mercury.	Mercury	7439-97-6	NA	RMERC
	Phenyl mercuric acetate nonwastewaters that are residues from RMERC and contain less than 260 mg/kg total mercury.	Mercury	7439-97-6	NA	0.20 mg/l TCLP
	Phenyl mercuric acetate nonwastewaters that are incinerator residues and contain less than 260 mg/kg total mercury.	Mercury	7439-97-6	NA	0.025 mg/l TCLP
	All phenyl mercuric acetate wastewaters.	Mercury	7439-97-6	0.15	NA
P093	Phenylthiourea	Phenylthiourea	103-85-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P094	Phorate	Phorate	298-02-2	0.021	4.6
P095	Phosgene	Phosgene	75-44-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P096	Phosphine	Phosphine	7803-51-2	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
P097	Famphur	Famphur	52-85-7	0.017	15
P098	Potassium cyanide.	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30

P099	Potassium silver cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Silver	7440-22-4	0.43	0.14 mg/l TCLP
P101	Ethyl cyanide (Propanenitrile)	Ethyl cyanide (Propanenitrile)	107-12-0	0.24	360
P102	Propargyl alcohol	Propargyl alcohol	107-19-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P103	Selenourea	Selenium	7782-49-2	0.82	5.7 mg/l TCLP
P104	Silver cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Silver	7440-22-4	0.43	0.14 mg/l TCLP
P105	Sodium azide	Sodium azide	26628-22-8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P106	Sodium cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P108	Strychnine and salts	Strychnine and salts	57-24-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P109	Tetraethyldithiopyro-phosphate	Tetraethyldithio-pyrophosphate	3689-24-5	CARBN; or CMBST	CMBST
P110	Tetraethyl lead	Lead	7439-92-1	0.69	0.75 mg/l TCLP
P111	Tetraethylpyrophosphat e	Tetraethylpyropho sphate	107-49-3	CARBN; or CMBST	CMBST

P112	Tetranitromethane	Tetranitromethane	509-14-8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P113	Thallic oxide	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
P114	Thallium selenite	Selenium	7782-49-2	0.82	5.7 mg/l TCLP
P115	Thallium (I) sulfate	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
P116	Thiosemicarbazide	Thiosemicarbazide	79-19-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P118	Trichloromethanethiol	Trichloro-methanethiol	75-70-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P119	Ammonium vanadate	Vanadium (measured in wastewaters only)	7440-62-2	4.3	STABL
P120	Vanadium pentoxide	Vanadium (measured in wastewaters only)	7440-62-2	4.3	STABL
P121	Zinc cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P122	Zinc phosphide Zn_3P_2, when present at concentrations greater than 10%	Zinc Phosphide	1314-84-7	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
P123	Toxaphene	Toxaphene	8001-35-2	0.0095	2.6
P127	Carbofuran	Carbofuran	1563-66-2	0.006	0.14

P128	Mexacarbate	Mexacarbate	315-18-4	0.056	1.4
P185	Tirpate [10]	Tirpate	26419-73-8	0.056	0.28
P188	Physostigmine salicylate	Physostigmine salicylate	57-64-7	0.056	1.4
P189	Carbosulfan	Carbosulfan	55285-14-8	0.028	1.4
P190	Metolcarb	Metolcarb	1129-41-5	0.056	1.4
P191	Dimetilan [10]	Dimetilan	644-64-4	0.056	1.4
P192	Isolan [10]	Isolan	119-38-0	0.056	1.4
P194	Oxamyl	Oxamyl	23135-22-0	0.056	0.28
P196	Manganese dimethyldithiocarbamate	Dithiocarbamates (total)	NA	0.028	28
P197	Formparanate [10]	Formparanate	17702-57-7	0.056	1.4
P198	Formetanate hydrochloride	Formetanate hydrochloride	23422-53-9	0.056	1.4
P199	Methiocarb	Methiocarb	2032-65-7	0.056	1.4
P201	Promecarb	Promecarb	2631-37-0	0.056	1.4
P202	m-Cumenyl methylcarbamate	m-Cumenyl methylcarbamate	64-00-6	0.056	1.4
P203	Aldicarb sulfone	Aldicarb sulfone	1646-88-4	0.056	0.28
P204	Physostigmine	Physostigmine	57-47-6	0.056	1.4
P205	Ziram	Dithiocarbamates (total)	NA	0.028	28

U001	Acetaldehyde	Acetaldehyde	75-07-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U002	Acetone	Acetone	67-64-1	0.28	160
U003	Acetonitrile	Acetonitrile	75-05-8	5.6	CMBST
		Acetonitrile; alternate[6] standard for nonwastewaters only	75-05-8	NA	38
U004	Acetophenone	Acetophenone	98-86-2	0.010	9.7
U005	2-Acetylaminofluorene	2-Acetylamino-fluorene	53-96-3	0.059	140
U006	Acetyl chloride	Acetyl Chloride	75-36-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U007	Acrylamide	Acrylamide	79-06-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U008	Acrylic acid	Acrylic acid	79-10-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U009	Acrylonitrile	Acrylonitrile	107-13-1	0.24	84
U010	Mitomycin C	Mitomycin C	50-07-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U011	Amitrole	Amitrole	61-82-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

U012	Aniline	Aniline	62-53-3	0.81	14
U014	Auramine	Auramine	492-80-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U015	Azaserine	Azaserine	115-02-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U016	Benz(c)acridine	Benz(c)acridine	225-51-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U017	Benzal chloride	Benzal chloride	98-87-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U018	Benz(a)anthracene	Benz(a)anthracene	56-55-3	0.059	3.4
U019	Benzene	Benzene	71-43-2	0.14	10
U020	Benzenesulfonyl chloride	Benzenesulfonyl chloride	98-09-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U021	Benzidine	Benzidine	92-87-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U022	Benzo(a)pyrene	Benzo(a)pyrene	50-32-8	0.061	3.4
U023	Benzotrichloride	Benzotrichloride	98-07-7	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U024	bis(2-Chloroethoxy)methane	bis(2-Chloroethoxy)-methane	111-91-1	0.036	7.2

U025	bis(2-Chloroethyl)ether	bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
U026	Chlornaphazine	Chlornaphazine	494-03-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U027	bis(2-Chloroisopropyl)ether	bis(2-Chloroisopropyl)ether	39638-32-9	0.055	7.2
U028	bis(2-Ethylhexyl) phthalate	bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
U029	Methyl bromide (Bromomethane)	Methyl bromide (Bromomethane)	74-83-9	0.11	15
U030	4-Bromophenyl phenyl ether	4-Bromophenyl phenyl ether	101-55-3	0.055	15
U031	n-Butyl alcohol	n-Butyl alcohol	71-36-3	5.6	2.6
U032	Calcium chromate	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
U033	Carbon oxyfluoride	Carbon oxyfluoride	353-50-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U034	Trichloroacetaldehyde (Chloral)	Trichloroacetal-dehyde (Chloral)	75-87-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U035	Chlorambucil	Chlorambucil	305-03-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U036	Chlordane	Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
U037	Chlorobenzene	Chlorobenzene	108-90-7	0.057	6.0
U038	Chlorobenzilate	Chlorobenzilate	510-15-6	0.10	CMBST

U039	p-Chloro-m-cresol	p-Chloro-m-cresol	59-50-7	0.018	14
U041	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	106-89-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U042	2-Chloroethyl vinyl ether	2-Chloroethyl vinyl ether	110-75-8	0.062	CMBST
U043	Vinyl chloride	Vinyl chloride	75-01-4	0.27	6.0
U044	Chloroform	Chloroform	67-66-3	0.046	6.0
U045	Chloromethane (Methyl chloride)	Chloromethane (Methyl chloride)	74-87-3	0.19	30
U046	Chloromethyl methyl ether	Chloromethyl methyl ether	107-30-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U047	2-Chloronaphthalene	2-Chloronaphthalene	91-58-7	0.055	5.6
U048	2-Chlorophenol	2-Chlorophenol	95-57-8	0.044	5.7
U049	4-Chloro-o-toluidine hydrochloride	4-Chloro-o-toluidine hydrochloride	3165-93-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U050	Chrysene	Chrysene	218-01-9	0.059	3.4
U051	Creosote	Naphthalene	91-20-3	0.059	5.6
		Pentachlorophenol	87-86-5	0.089	7.4
		Phenanthrene	85-01-8	0.059	5.6
		Pyrene	129-00-0	0.067	8.2

		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
U052	Cresols (Cresylic acid)	o-Cresol	95-48-7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
		Cresol-mixed isomers (Cresylic acid) (sum of o-, m-, and p-cresol concentrations)	1319-77-3	0.88	11.2
U053	Crotonaldehyde	Crotonaldehyde	4170-30-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U055	Cumene	Cumene	98-82-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U056	Cyclohexane	Cyclohexane	110-82-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U057	Cyclohexanone	Cyclohexanone	108-94-1	0.36	CMBST

		Cyclohexanone; alternate[6] standard for nonwastewaters only	108-94-1	NA	0.75 mg/l TCLP
U058	Cyclophosphamide	Cyclophosphamide	50-18-0	CARBN; or CMBST	CMBST
U059	Daunomycin	Daunomycin	20830-81-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U060	DDD	o,p'-DDD	53-19-0	0.023	0.087
		p,p'-DDD	72-54-8	0.023	0.087
U061	DDT	o-p'-DDT	789-02-6	0.0039	0.087
		p,p'-DDT	50-29-3	0.0039	0.087
		o,p'-DDD	53-19-0	0.023	0.087
		p,p'-DDD	72-54-8	0.023	0.087
		o,p'-DDE	3424-82-6	0.031	0.087
		p,p'-DDE	72-55-9	0.031	0.087
U062	Diallate	Diallate	2303-16-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U063	Dibenz(a,h)anthracene	Dibenz(a,h)anthracene	53-70-3	0.055	8.2
U064	Dibenz(a,i)pyrene	Dibenz(a,i)pyrene	189-55-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U066	1,2-Dibromo-3-chloropropane	1,2-Dibromo-3-chloropropane	96-12-8	0.11	15

U067	Ethylene dibromide (1,2-Dibromoethane)	Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.028	15
U068	Dibromomethane	Dibromomethane	74-95-3	0.11	15
U069	Di-n-butyl phthalate	Di-n-butyl phthalate	84-74-2	0.057	28
U070	o-Dichlorobenzene	o-Dichlorobenzene	95-50-1	0.088	6.0
U071	m-Dichlorobenzene	m-Dichlorobenzene	541-73-1	0.036	6.0
U072	p-Dichlorobenzene	p-Dichlorobenzene	106-46-7	0.090	6.0
U073	3,3'-Dichlorobenzidine	3,3'-Dichlorobenzidine	91-94-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U074	1,4-Dichloro-2-butene	cis-1,4-Dichloro-2-butene	1476-11-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		trans-1,4-Dichloro-2-butene	764-41-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U075	Dichlorodifluoromethane	Dichlorodifluoromethane	75-71-8	0.23	7.2
U076	1,1-Dichloroethane	1,1-Dichloroethane	75-34-3	0.059	6.0
U077	1,2-Dichloroethane	1,2-Dichloroethane	107-06-2	0.21	6.0
U078	1,1-Dichloroethylene	1,1-Dichloroethylene	75-35-4	0.025	6.0
U079	1,2-Dichloroethylene	trans-1,2-Dichloroethylene	156-60-5	0.054	30
U080	Methylene chloride	Methylene chloride	75-09-2	0.089	30
U081	2,4-Dichlorophenol	2,4-Dichlorophenol	120-83-2	0.044	14

U082	2,6-Dichlorophenol	2,6-Dichlorophenol	87-65-0	0.044	14
U083	1,2-Dichloropropane	1,2-Dichloropropane	78-87-5	0.85	18
U084	1,3-Dichloropropylene	cis-1,3-Dichloropropylene	10061-01-5	0.036	18
		trans-1,3-Dichloropropylene	10061-02-6	0.036	18
U085	1,2:3,4-Diepoxybutane	1,2:3,4-Diepoxybutane	1464-53-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U086	N,N'-Diethylhydrazine	N,N'-Diethylhydrazine	1615-80-1	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U087	O,O-Diethyl S-methyldithiophosphate	O,O-Diethyl S-methyldithiophosphate	3288-58-2	CARBN; or CMBST	CMBST
U088	Diethyl phthalate	Diethyl phthalate	84-66-2	0.20	28
U089	Diethyl stilbestrol	Diethyl stilbestrol	56-53-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U090	Dihydrosafrole	Dihydrosafrole	94-58-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U091	3,3'-Dimethoxybenzidine	3,3'-Dimethoxybenzidine	119-90-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U092	Dimethylamine	Dimethylamine	124-40-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

U093	p-Dimethylaminoazobenzene	p-Dimethylaminoazobenzene	60-11-7	0.13	CMBST
U094	7,12-Dimethylbenz(a)anthracene	7,12-Dimethylbenz(a)anthracene	57-97-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U095	3,3'-Dimethylbenzidine	3,3'-Dimethylbenzidine	119-93-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U096	alpha, alpha-Dimethyl benzyl hydroperoxide	alpha, alpha-Dimethyl benzyl hydroperoxide	80-15-9	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U097	Dimethylcarbamoyl chloride	Dimethylcarbamoyl chloride	79-44-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U098	1,1-Dimethylhydrazine	1,1-Dimethylhydrazine	57-14-7	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U099	1,2-Dimethylhydrazine	1,2-Dimethylhydrazine	540-73-8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U101	2,4-Dimethylphenol	2,4-Dimethylphenol	105-67-9	0.036	14
U102	Dimethyl phthalate	Dimethyl phthalate	131-11-3	0.047	28
U103	Dimethyl sulfate	Dimethyl sulfate	77-78-1	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U105	2,4-Dinitrotoluene	2,4-Dinitrotoluene	121-14-2	0.32	140
U106	2,6-Dinitrotoluene	2,6-Dinitrotoluene	606-20-2	0.55	28

U107	Di-n-octyl phthalate	Di-n-octyl phthalate	117-84-0	0.017	28
U108	1,4-Dioxane	1,4-Dioxane	123-91-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		1,4-Dioxane; alternate[6]	123-91-1	12.0	170
U109	1,2-Diphenylhydrazine	1,2-Diphenylhydrazine	122-66-7	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
		1,2-Diphenylhydrazine; alternate[6] standard for wastewaters only	122-66-7	0.087	NA
U110	Dipropylamine	Dipropylamine	142-84-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U111	Di-n-propylnitrosamine	Di-n-propylnitrosamine	621-64-7	0.40	14
U112	Ethyl acetate	Ethyl acetate	141-78-6	0.34	33
U113	Ethyl acrylate	Ethyl acrylate	140-88-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U114	Ethylenebisdithio-carbamic acid salts and esters	Ethylenebisdithio-carbamic acid	111-54-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U115	Ethylene oxide	Ethylene oxide	75-21-8	(WETOX or CHOXD) fb CARBN; or CMBST	CHOXD; or CMBST

		Ethylene oxide; alternate[6] standard for wastewaters only	75-21-8	0.12	NA
U116	Ethylene thiourea	Ethylene thiourea	96-45-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U117	Ethyl ether	Ethyl ether	60-29-7	0.12	160
U118	Ethyl methacrylate	Ethyl methacrylate	97-63-2	0.14	160
U119	Ethyl methane sulfonate	Ethyl methane sulfonate	62-50-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U120	Fluoranthene	Fluoranthene	206-44-0	0.068	3.4
U121	Trichloromonofluoromethane	Trichloromonofluoromethane	75-69-4	0.020	30
U122	Formaldehyde	Formaldehyde	50-00-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U123	Formic acid	Formic acid	64-18-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U124	Furan	Furan	110-00-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U125	Furfural	Furfural	98-01-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U126	Glycidylaldehyde	Glycidylaldehyde	765-34-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

U127	Hexachlorobenzene	Hexachlorobenzene	118-74-1	0.055	10
U128	Hexachlorobutadiene	Hexachlorobutadiene	87-68-3	0.055	5.6
U129	Lindane	alpha-BHC	319-84-6	0.00014	0.066
		beta-BHC	319-85-7	0.00014	0.066
		delta-BHC	319-86-8	0.023	0.066
		gamma-BHC (Lindane)	58-89-9	0.0017	0.066
U130	Hexachlorocyclopenta-diene	Hexachlorocyclo-pentadiene	77-47-4	0.057	2.4
U131	Hexachloroethane	Hexachloroethane	67-72-1	0.055	30
U132	Hexachlorophene	Hexachlorophene	70-30-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U133	Hydrazine	Hydrazine	302-01-2	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U134	Hydrogen fluoride	Fluoride (measured in wastewaters only)	7664-39-3	35	ADGAS fb NEUTR; or NEUTR
U135	Hydrogen Sulfide	Hydrogen Sulfide	7783-06-4	CHOXD; CHRED, or CMBST	CHOXD; CHRED; or CMBST.
U136	Cacodylic acid	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
U137	Indeno(1,2,3-cd)pyrene	Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4
U138	Iodomethane	Iodomethane	74-88-4	0.19	65
U140	Isobutyl alcohol	Isobutyl alcohol	78-83-1	5.6	170

U141	Isosafrole	Isosafrole	120-58-1	0.081	2.6
U142	Kepone	Kepone	143-50-8	0.0011	0.13
U143	Lasiocarpine	Lasiocarpine	303-34-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U144	Lead acetate	Lead	7439-92-1	0.69	0.75 mg/l TCLP
U145	Lead phosphate	Lead	7439-92-1	0.69	0.75 mg/l TCLP
U146	Lead subacetate	Lead	7439-92-1	0.69	0.75 mg/l TCLP
U147	Maleic anhydride	Maleic anhydride	108-31-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U148	Maleic hydrazide	Maleic hydrazide	123-33-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U149	Malononitrile	Malononitrile	109-77-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U150	Melphalan	Melphalan	148-82-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U151	U151 (mercury) nonwastewaters that contain greater than or equal to 260 mg/kg total mercury.	Mercury	7439-97-6	NA	RMERC
	U151 (mercury) nonwastewaters that contain less than 260 mg/kg total mercury and that are residues from RMERC only.	Mercury	7439-97-6	NA	0.20 mg/l TCLP

	U151 (mercury) nonwastewaters that contain less than 260 mg/kg total mercury and that are not residues from RMERC.	Mercury	7439-97-6	NA	0.025 mg/l TCLP
	All U151 (mercury) wastewaters.	Mercury	7439-97-6	0.15	NA
	Elemental Mercury Contaminated with Radioactive Materials	Mercury	7439-97-6	NA	AMLGM
U152	Methacrylonitrile	Methacrylonitrile	126-98-7	0.24	84
U153	Methanethiol	Methanethiol	74-93-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U154	Methanol	Methanol	67-56-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		Methanol; alternate[6] set of standards for both wastewaters and nonwastewaters	67-56-1	5.6	0.75 mg/l TCLP
U155	Methapyrilene	Methapyrilene	91-80-5	0.081	1.5
U156	Methyl chlorocarbonate	Methyl chlorocarbonate	79-22-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U157	3-Methylcholanthrene	3-Methylcholanthrene	56-49-5	0.0055	15
U158	4,4'-Methylene bis(2-chloroaniline)	4,4'-Methylene bis(2-chloroaniline)	101-14-4	0.50	30
U159	Methyl ethyl ketone	Methyl ethyl ketone	78-93-3	0.28	36

U160	Methyl ethyl ketone peroxide	Methyl ethyl ketone peroxide	1338-23-4	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U161	Methyl isobutyl ketone	Methyl isobutyl ketone	108-10-1	0.14	33
U162	Methyl methacrylate	Methyl methacrylate	80-62-6	0.14	160
U163	N-Methyl N'-nitro N-nitrosoguanidine	N-Methyl N'-nitro N-nitrosoguanidine	70-25-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U164	Methylthiouracil	Methylthiouracil	56-04-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U165	Naphthalene	Naphthalene	91-20-3	0.059	5.6
U166	1,4-Naphthoquinone	1,4-Naphthoquinone	130-15-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U167	1-Naphthylamine	1-Naphthylamine	134-32-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U168	2-Naphthylamine	2-Naphthylamine	91-59-8	0.52	CMBST
U169	Nitrobenzene	Nitrobenzene	98-95-3	0.068	14
U170	p-Nitrophenol	p-Nitrophenol	100-02-7	0.12	29
U171	2-Nitropropane	2-Nitropropane	79-46-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U172	N-Nitrosodi-n-butylamine	N-Nitrosodi-n-butylamine	924-16-3	0.40	17

U173	N-Nitrosodiethanolamine	N-Nitrosodiethanolamine	1116-54-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U174	N-Nitrosodiethylamine	N-Nitrosodiethyla-mine	55-18-5	0.40	28
U176	N-Nitroso-N-ethylurea	N-Nitroso-N-ethylurea	759-73-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U177	N-Nitroso-N-methylurea	N-Nitroso-N-methylurea	684-93-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U178	N-Nitroso-N-methylurethane	N-Nitroso-N-methylurethane	615-53-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U179	N-Nitrosopiperidine	N-Nitrosopiperidine	100-75-4	0.013	35
U180	N-Nitrosopyrrolidine	N-Nitrosopyrrolidine	930-55-2	0.013	35
U181	5-Nitro-o-toluidine	5-Nitro-o-toluidine	99-55-8	0.32	28
U182	Paraldehyde	Paraldehyde	123-63-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U183	Pentachlorobenzene	Pentachlorobenzene	608-93-5	0.055	10
U184	Pentachloroethane	Pentachloroethane	76-01-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

		Pentachloroethane; alternate[6] standards for both wastewaters and nonwastewaters	76-01-7	0.055	6.0
U185	Pentachloronitrobenzene	Pentachloronitro-benzene	82-68-8	0.055	4.8
U186	1,3-Pentadiene	1,3-Pentadiene	504-60-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U187	Phenacetin	Phenacetin	62-44-2	0.081	16
U188	Phenol	Phenol	108-95-2	0.039	6.2
U189	Phosphorus sulfide	Phosphorus sulfide	1314-80-3	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
U190	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	100-21-0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	85-44-9	0.055	28
U191	2-Picoline	2-Picoline	109-06-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U192	Pronamide	Pronamide	23950-58-5	0.093	1.5
U193	1,3-Propane sultone	1,3-Propane sultone	1120-71-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

U194	n-Propylamine	n-Propylamine	107-10-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U196	Pyridine	Pyridine	110-86-1	0.014	16
U197	p-Benzoquinone	p-Benzoquinone	106-51-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U200	Reserpine	Reserpine	50-55-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U201	Resorcinol	Resorcinol	108-46-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U202	Saccharin and salts	Saccharin	81-07-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U203	Safrole	Safrole	94-59-7	0.081	22
U204	Selenium dioxide	Selenium	7782-49-2	0.82	5.7 mg/l TCLP
U205	Selenium sulfide	Selenium	7782-49-2	0.82	5.7 mg/l TCLP
U206	Streptozotocin	Streptozotocin	18883-66-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U207	1,2,4,5-Tetrachlorobenzene	1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
U208	1,1,1,2-Tetrachloroethane	1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
U209	1,1,2,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	79-34-5	0.057	6.0

U210	Tetrachloroethylene	Tetrachloroethylene	127-18-4	0.056	6.0
U211	Carbon tetrachloride	Carbon tetrachloride	56-23-5	0.057	6.0
U213	Tetrahydrofuran	Tetrahydrofuran	109-99-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U214	Thallium (I) acetate	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
U215	Thallium (I) carbonate	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
U216	Thallium (I) chloride	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
U217	Thallium (I) nitrate	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
U218	Thioacetamide	Thioacetamide	62-55-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U219	Thiourea	Thiourea	62-56-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U220	Toluene	Toluene	108-88-3	0.080	10
U221	Toluenediamine	Toluenediamine	25376-45-8	CARBN; or CMBST	CMBST
U222	o-Toluidine hydrochloride	o-Toluidine hydrochloride	636-21-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

U223	Toluene diisocyanate	Toluene diisocyanate	26471-62-5	CARBN; or CMBST	CMBST
U225	Bromoform (Tribromomethane)	Bromoform (Tribromomethane)	75-25-2	0.63	15
U226	1,1,1-Trichloroethane	1,1,1-Trichloroethane	71-55-6	0.054	6.0
U227	1,1,2-Trichloroethane	1,1,2-Trichloroethane	79-00-5	0.054	6.0
U228	Trichloroethylene	Trichloroethylene	79-01-6	0.054	6.0
U234	1,3,5-Trinitrobenzene	1,3,5-Trinitrobenzene	99-35-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U235	tris-(2,3-Dibromopropyl)-phosphate	tris-(2,3-Dibromopropyl)-phosphate	126-72-7	0.11	0.10
U236	Trypan Blue	Trypan Blue	72-57-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U237	Uracil mustard	Uracil mustard	66-75-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U238	Urethane (Ethyl carbamate)	Urethane (Ethyl carbamate)	51-79-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U239	Xylenes	Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
U240	2,4-D (2,4-Dichlorophenoxyacetic acid)	2,4-D (2,4-Dichlorophenoxy-acetic acid)	94-75-7	0.72	10

	2,4-D (2,4-Dichlorophenoxyacetic acid) salts and esters		NA	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U243	Hexachloropropylene	Hexachloropropy-lene	1888-71-7	0.035	30
U244	Thiram	Thiram	137-26-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U246	Cyanogen bromide	Cyanogen bromide	506-68-3	CHOXD; WETOX; or CMBST	CHOXD; WETOX; or CMBST
U247	Methoxychlor	Methoxychlor	72-43-5	0.25	0.18
U248	Warfarin, & salts, when present at concentrations of 0.3% or less	Warfarin	81-81-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U249	Zinc phosphide, Zn_3P_2, when present at concentrations of 10% or less	Zinc Phosphide	1314-84-7	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
U271	Benomyl	Benomyl	17804-35-2	0.056	1.4
U278	Bendiocarb	Bendiocarb	22781-23-3	0.056	1.4
U279	Carbaryl	Carbaryl	63-25-2	0.006	0.14
U280	Barban	Barban	101-27-9	0.056	1.4
U328	o-Toluidine	o-Toluidine	95-53-4	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN.	CMBST
U353	p-Toluidine	p-Toluidine	106-49-0	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN	CMBST

U359	2-Ethoxyethanol	2-Ethoxyethanol	110-80-5	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN	CMBST
U364	Bendiocarb phenol [10]	Bendiocarb phenol	22961-82-6	0.056	1.4
U367	Carbofuran phenol	Carbofuran phenol	1563-38-8	0.056	1.4
U372	Carbendazim	Carbendazim	10605-21-7	0.056	1.4
U373	Propham	Propham	122-42-9	0.056	1.4
U387	Prosulfocarb	Prosulfocarb	52888-80-9	0.042	1.4
U389	Triallate	Triallate	2303-17-5	0.042	1.4
U394	A2213[10]	A2213	30558-43-1	0.042	1.4
U395	Diethylene glycol, dicarbamate [10]	Diethylene glycol, dicarbamate	5952-26-1	0.056	1.4
U404	Triethylamine	Triethylamine	121-44-8	0.081	1.5
U409	Thiophanate-methyl	Thiophanate-methyl	23564-05-8	0.056	1.4
U410	Thiodicarb	Thiodicarb	59669-26-0	0.019	1.4
U411	Propoxur	Propoxur	114-26-1	0.056	1.4

FOOTNOTES TO TREATMENT STANDARDS TABLE

1. The waste descriptions provided in this table do not replace waste descriptions in Rule 1200-01-11-.02. Descriptions of Treatment/Regulatory Subcategories are provided, as needed, to distinguish between applicability of different standards.

2. CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.

3. Concentration standards for wastewaters are expressed in mg/L and are based on analysis of composite samples.

4. All treatment standards expressed as a Technology Code or combination of Technology Codes are explained in detail in subparagraph (3)(c) of this Rule Table 1 - Technology Codes and Descriptions of Technology-Based Standards.

5. Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of Rule 1200-01-11-.06(15), or Rule 1200-01-11-.05(15), or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in part (3)(a)4 of this Rule. All concentration standards for nonwastewaters are based on analysis of grab samples.

6. Where an alternate treatment standard or set of alternate standards has been indicated, a facility may comply with this alternate standard, but only for the Treatment/Regulatory Subcategory or physical form (i.e., wastewater and/or nonwastewater) specified for that alternate standard.

7. Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010C or 9012B, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846, listed in 40 CFR 260.11; Rule 1200-01-11-.01(2)(b)1, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

8. These wastes, when rendered nonhazardous and then subsequently managed in CWA or CWA-equivalent systems, are not subject to treatment standards. (See subparts (1)(a)3(iii) and (iv) of this Rule.)

9. These wastes, when rendered nonhazardous and then subsequently injected in a Class I SDWA well, are not subject to treatment standards. (See 40 CFR 148.1(d).)

10. The treatment standard for this waste may be satisfied by either meeting the constituent concentrations in this table or by treating the waste by the specified technologies: combustion, as defined by the technology code CMBST at subparagraph (3)(c) Table 1 of this Rule for nonwastewaters; and, biodegradation as defined by the technology code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined as technology code CMBST at subparagraph (3)(c) Table 1 of this Rule for wastewaters.

11. For these wastes, the definition of CMBST is limited to: (1) combustion units operating under Rule 1200-01-11-.09, (2) combustion units permitted under Rule 1200-01-11-.06(15), or (3) combustion units operating under Rule 1200-01-11-.05(15), which have obtained a determination of equivalent treatment under part (3)(c)2 of this Rule.

12. Disposal of K175 wastes that have complied with all applicable Rule 1200-01-11-.10(3)(a) treatment standards must also be macroencapsulated in accordance with Rule 1200-01-11-.10(3)(a) Table 1 unless the waste is placed in:

    (i) A hazardous waste (Subtitle C) monofill containing only K175 wastes that meet all applicable Rule 1200-01-11-.10(3)(a) treatment standards; or

    (ii) A dedicated hazardous waste (Subtitle C) landfill cell in which all other wastes being co-disposed are at pH $\leq$6.0.

(b) Treatment Standards Expressed as Concentrations in Waste Extract [40 CFR 268.41]

For the requirements previously found in this paragraph and for treatment standards in Table CCWE-Constituent Concentrations in Waste Extracts, refer to subparagraph (3)(a) of this Rule.

(c) Treatment Standards Expressed as Specified Technologies [40 CFR 268.42]

(Note: For the requirements previously found in this paragraph in Table 2-Technology-Based Standards By RCRA Waste Code, and Table 3-Technology-Based Standards for Specific Radioactive Hazardous Mixed Waste, refer to subparagraph (3)(a) of this Rule.)

1. The following wastes in the table in subparagraph (3)(a) of this Rule "Treatment Standards for Hazardous Wastes," for which standards are expressed as a treatment method rather than a concentration level, must be treated using the technology or technologies specified in the table entitled " Technology Codes and Description of Technology-Based Standards" in this subparagraph.

TABLE 1.[a]-TECHNOLOGY CODES AND DESCRIPTION OF TECHNOLOGY-BASED STANDARDS

Technology Code	Description of Technology-based Standards
ADGAS:	Venting of compressed gases into an absorbing or reacting media (i.e., solid or liquid)-venting can be accomplished through physical release utilizing valves/piping; physical penetration of the container; and/or penetration through detonation.
AMLGM:	Amalgamation of liquid, elemental mercury contaminated with radioactive materials utilizing inorganic reagents such as copper, zinc, nickel, gold, and sulfur that result in a nonliquid, semi-solid amalgam and thereby reducing potential emissions of elemental mercury vapors to the air.
BIODG:	Biodegradation of organics or non-metallic inorganics (i.e., degradable inorganics that contain the elements of phosphorus, nitrogen, and sulfur) in units operated under either aerobic or anaerobic conditions such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (e.g., Total Organic Carbon can often be used as an indicator parameter for the biodegradation of many organic constituents that cannot be directly analyzed in wastewater residues).
CARBN:	Carbon adsorption (granulated or powdered) of non-metallic inorganics, organo-metallics, and/or organic constituents, operated such that a surrogate compound or indicator parameter has not undergone breakthrough (e.g., Total Organic Carbon can often be used as an indicator parameter for the adsorption of many organic constituents that cannot be directly analyzed in wastewater residues). Breakthrough occurs when the carbon has become saturated with the constituent (or indicator parameter) and substantial change in adsorption rate associated with that constituent occurs.
CHOXD:	Chemical or electrolytic oxidation utilizing the following oxidation reagents (or waste reagents) or combinations of reagents: (1) Hypochlorite (e.g. bleach); (2) chlorine; (3) chlorine dioxide; (4) ozone or UV (ultraviolet light) assisted ozone; (5) peroxides; (6) persulfates; (7) perchlorates; (8) permanganates; and/or (9)

	other oxidizing reagents of equivalent efficiency, performed in units operated such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (e.g., Total Organic Carbon can often be used as an indicator parameter for the oxidation of many organic constituents that cannot be directly analyzed in wastewater residues). Chemical oxidation specifically includes what is commonly referred to as alkaline chlorination.
CHRED:	Chemical reduction utilizing the following reducing reagents (or waste reagents) or combinations of reagents: (1) Sulfur dioxide; (2) sodium, potassium, or alkali salts or sulfites, bisulfites, metabisulfites, and polyethylene glycols (e.g., NaPEG and KPEG); (3) sodium hydrosulfide; (4) ferrous salts; and/or (5) other reducing reagents of equivalent efficiency, performed in units operated such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (e.g., Total Organic Halogens can often be used as an indicator parameter for the reduction of many halogenated organic constituents that cannot be directly analyzed in wastewater residues). Chemical reduction is commonly used for the reduction of hexavalent chromium to the trivalent state.
CMBST:	High temperature organic destruction technologies, such as combustion in incinerators, boilers, or industrial furnaces operated in accordance with the applicable requirements of Rules 1200-01-11-.05(15), .06(15) or .09(8) and in other units operated in accordance with applicable technical operating requirements; and certain non-combustive technologies, such as the Catalytic Extraction Process.
DEACT:	Deactivation to remove the hazardous characteristics of a waste due to is ignitability, corrosivity, and/or reactivity.
FSUBS:	Fuel substitution in units operated in accordance with applicable technical operating requirements.
HLVIT:	Vitrification of high level mixed radioactive wastes in units in compliance with all applicable radioactive protection requirements under control of the Nuclear Regulatory Commission.
IMERC:	Incineration of wastes containing organics and mercury in units operated in accordance with the technical operating requirements of Rules 1200-01-11-.06(15) AND .05(15). All wastewater and nonwastewater residues derived from this process must then comply with the corresponding treatment standards per waste code with consideration of any applicable subcategories (e.g., High or Low Mercury Subcategories).
INCIN:	Incineration in units operated in accordance with the technical operating requirements of Rules 1200-01-11-.05(15) and .06(15).
LLEXT:	Liquid-liquid extraction (often referred to as solvent extraction) of organics from liquid wastes into an immiscible solvent for which the hazardous constituents have a greater solvent affinity, resulting in an extract high in organics that must undergo either incineration, reuse as a fuel, or other recovery/reuse and a raffinate (extracted liquid waste) proportionately low in organics that must undergo further treatment as specified in the standard.
MACRO:	Macroencapsulation with surface coating materials such as polymeric organics (e.g. resins and plastics) or with a jacket of inert inorganic materials to substantially reduce surface exposure to potential leaching media.

	Macroencapsulation specifically does not include any material that would be classified as a tank or container according to Rule 1200-01-11-.01(2)(a).
NEUTR:	Neutralization with the following reagents (or waste reagents) or combinations of reagents: (1) Acids; (2) bases; or (3) water (including wastewaters) resulting in a pH greater than 2 but less than 12.5 as measured in the aqueous residuals.
NLDBR:	No land disposal based on recycling.
POLYM:	Formation of complex high-molecular weight solids through polymerization of monomers in high-TOC D001 non-wastewaters which are chemical components in the manufacture of plastics.
PRECP:	Chemical precipitation of metals and other inorganics as insoluble precipitates of oxides, hydroxides, carbonates, sulfides, sulfates, chlorides, flourides, or phosphates. The following reagents (or waste reagents) are typically used alone or in combination: (1) Lime (i.e., containing oxides and/or hydroxides of calcium and/or magnesium; (2) caustic (i.e., sodium and/or potassium hydroxides; (3) soda ash (i.e., sodium carbonate); (4) sodium sulfide; (5) ferric sulfate or ferric chloride; (6) alum; or (7) sodium sulfate. Additional flocculating, coagulation or similar reagents/processes that enhance sludge dewatering characteristics are not precluded from use.
RBERY:	Thermal recovery of Beryllium.
RCGAS:	Recovery/reuse of compressed gases including techniques such as reprocessing of the gases for reuse/resale; filtering/adsorption of impurities; remixing for direct reuse or resale; and use of the gas as a fuel source.
RCORR:	Recovery of acids or bases utilizing one or more of the following recovery technologies: (1) Distillation (i.e., thermal concentration); (2) ion exchange; (3) resin or solid adsorption; (4) reverse osmosis; and/or (5) incineration for the recovery of acid-Note: this does not preclude the use of other physical phase separation or concentration techniques such as decantation, filtration (including ultrafiltration), and centrifugation, when used in conjunction with the above listed recovery technologies.
RLEAD:	Thermal recovery of lead in secondary lead smelters.
RMERC:	Retorting or roasting in a thermal processing unit capable of volatilizing mercury and subsequently condensing the volatilized mercury for recovery. The retorting or roasting unit (or facility) must be subject to one or more of the following: (a) a National Emissions Standard for Hazardous Air Pollutants (NESHAP) for mercury; (b) a Best Available Control Technology (BACT) or a Lowest Achievable Emission Rate (LAER) standard for mercury imposed pursuant to a Prevention of Significant Deterioration (PSD) permit; or (c) a state permit that establishes emission limitations (within meaning of section 302 of the Clean Air Act) for mercury. All wastewater and nonwastewater residues derived from this process must then comply with the corresponding treatment standards per waste code with consideration of any applicable subcategories (e.g., High or Low Mercury Subcategories).
RMETL:	Recovery of metals or inorganics utilizing one or more of the following direct physical/removal technologies: (1) Ion exchange; (2) resin or solid (i.e., zeolites) adsorption; (3) reverse osmosis; (4) chelation/solvent extraction; (5) freeze crystallization; (6) ultrafiltration and/or (7) simple precipitation (i.e.,

	crystallization) - Note: This does not preclude the use of other physical phase separation or concentration techniques such as decantation, filtration (including ultrafiltration), and centrifugation, when used in conjunction with the above listed recovery technologies.
RORGS:	Recovery of organics utilizing one or more of the following technologies: (1) Distillation; (2) thin film evaporation; (3) steam stripping; (4) carbon adsorption; (5) critical fluid extraction; (6) liquid-liquid extraction; (7) precipitation/crystallization (including freeze crystallization); or (8) chemical phase separation techniques (i.e., addition of acids, bases, demulsifiers, or similar chemicals); - Note: this does not preclude the use of other physical phase separation techniques such as a decantation, filtration (including ultrafiltration), and centrifugation, when used in conjunction with the above listed recovery technologies.
RTHRM:	Thermal recovery of metals or inorganics from nonwastewaters in units identified as industrial furnaces according to .01(2)(a) under the definition of "industrial furnaces".
RZINC:	Resmelting in high temperature metal recovery units for the purpose of recovery of zinc.
STABL:	Stabilization with the following reagents (or waste reagents) or combinations of reagents: (1) Portland cement; or (2) lime/pozzolans (e.g., fly ash and cement kiln dust) - this does not preclude the addition of reagents (e.g., iron salts, silicates, and clays) designed to enhance the set/cure time and/or compressive strength, or to overall reduce the leachability of the metal or inorganic.
SSTRP:	Steam stripping of organics from liquid wastes utilizing direct application of steam to the wastes operated such that liquid and vapor flow rates, as well as temperature and pressure ranges, have been optimized, monitored, and maintained. These operating parameters are dependent upon the design parameters of the unit such as the number of separation stages and the internal column design, thus resulting in a condensed extract high in organics that must undergo either incineration, reuse as a fuel, or other recovery/reuse and an extracted wastewater that must undergo further treatment as specified in the standard.
WETOX:	Wet air oxidation performed in units operated such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (e.g., Total Organic Carbon can often be used as an indicator parameter for the oxidation of many organic constituents that cannot be directly analyzed in wastewater residues).
WTRRX:	Controlled reaction with water for highly reactive inorganic or organic chemicals with precautionary controls for protection of workers from potential violent reactions as well as precautionary controls for potential emissions of toxic/ignitable levels of gases released during the reaction.

FOOTNOTE: [a]All Rule citations contained herein are from Rule Chapter 1200-01-11.

(Note 1: When a combination of these technologies (i.e., a treatment train) is specified as a single treatment standard, the order of application is specified in Table 2 of Rule 1200-01-11-.10(3)(c) by indicating the five letter technology code that must be applied first, then the designation " fb." (an abbreviation for " followed by"), then the five letter technology code for the technology that must be applied next, and so on.)

(Note 2: When more than one technology (or treatment train) are specified as alternative treatment standards, the five letter technology codes (or the treatment trains) are separated by a semicolon (;) with the last technology preceded by the word " or" . This indicates that any one of these BDAT technologies or treatment trains can be used for compliance with the standard.)

2. (Reserved) [40 CFR 268.42(b)]

(Note: The authority for implementing 40 CFR 268.42(b) that any person may apply to the Administrator to use an alternative treatment method that can achieve performance equivalent to that achieved by methods specified in parts 1,3, and 4 of this subparagraph [paragraphs (a),(c), and (d) of 40 CFR 268.42] for wastes or specified in Table 1 of paragraph (f) of this Rule [Table 1 of 40 CFR 268.45] for hazardous debris and that, if the Administrator approves, such approval must be stated in writing and may contain provisions and conditions as the Administrator deems appropriate and with which the applicant must comply remains with the U.S. Environmental Protection Agency.)

3. As an alternative to the otherwise applicable paragraph (3) of this Rule treatment standards, lab packs are eligible for land disposal provided the following requirements are met:

   (i) The lab packs comply with the applicable provisions of Rule 1200-01-11-.06(14)(q) and Rule 1200-01-11-.05(14)(q);

   (ii) The lab pack does not contain any of the wastes listed in Appendix IV to subparagraph (5)(a) of this Rule;

   (iii) The lab packs are incinerated in accordance with the requirements of Rule 1200-01-11-.06(15) or Rule 1200-01-11-.05(15); and

   (iv) Any incinerator residues from lab packs containing D004, D005, D006, D007, D008, D010, and D011 are treated in compliance with the applicable treatment standards specified for such wastes in paragraph (3) of this Rule.

4. Radioactive hazardous mixed wastes are subject to the treatment standards in subparagraph (3)(a) of this Rule. Where treatment standards are specified for radioactive mixed wastes in the Table of Treatment Standards, those treatment standards will govern. Where there is no specific treatment standard for radioactive mixed waste, the treatment standard for the hazardous waste (as designated by EPA waste code) applies. Hazardous debris containing radioactive waste is subject to the treatment standards specified in subparagraph (3)(f) of this Rule.

(d) Treatment Standards Expressed as Waste Concentrations [40 CFR 268.43]

For the requirements previously found in this section and for treatment standards in Table CCW-Constituent Concentrations in Wastes, refer to subparagraph (3)(a) of this Rule.

(e) (Reserved) Variance From a Treatment Standard [40 CFR 268.44]

(Note: The authority for implementing subparagraph (e) of this Rule [40 CFR 268.44] Variance from a Treatment Standard remains with the U.S. Environmental Protection Agency.)

(f) Treatment Standards for Hazardous Debris [40 CFR 268.45]

1. Treatment standards

Hazardous debris must be treated prior to land disposal as follows unless Department determines under Rule 1200-01-11-.02(1)(c)6(ii) that the debris is no longer contaminated with hazardous waste or the debris is treated to the waste-specific treatment standard provided in this subparagraph for the waste contaminating the debris:

(i) General

Hazardous debris must be treated for each "contaminant subject to treatment" defined by part 2 of this subparagraph using the technology or technologies identified in Table 1 of this subparagraph.

(ii) Characteristic debris

Hazardous debris that exhibits the characteristic of ignitability, corrosivity, or reactivity identified under Rules 1200-01-11.02(3)(b),(c) and (d), respectively, must be deactivated by treatment using one of the technologies identified in Table 1 of this subparagraph.

(iii) Mixtures of debris types

The treatment standards of Table 1 in this subparagraph must be achieved for each type of debris contained in a mixture of debris types. If an immobilization technology is used in a treatment train, it must be the last treatment technology used.

(iv) Mixtures of contaminant types

Debris that is contaminated with two or more contaminants subject to treatment identified under part 2 of this subparagraph must be treated for each contaminant using one or more treatment technologies identified in Table 1 of this subparagraph. If an immobilization technology is used in a treatment train, it must be the last treatment technology used.

(v) Waste PCBs

Hazardous debris that is also a waste PCB under 40 CFR part 761 is subject to the requirements of either 40 CFR part 761 or the requirements of this subparagraph, whichever are more stringent.

2. Contaminants subject to treatment

Hazardous debris must be treated for each "contaminant subject to treatment." The contaminants subject to treatment must be determined as follows:

(i) Toxicity characteristic debris

The contaminants subject to treatment for debris that exhibits the Toxicity Characteristic (TC) by Rule 1200-01-11-.02(3)(e) are those EP constituents for which the debris exhibits the TC toxicity characteristic.

(ii) Debris contaminated with listed waste

The contaminants subject to treatment for debris that is contaminated with a prohibited listed hazardous waste are those constituents or wastes for which treatment standards are established for the waste under subparagraph (3)(a) of this Rule.

(iii) Cyanide reactive debris

Hazardous debris that is reactive because of cyanide must be treated for cyanide.

3. Conditioned exclusion of treated debris

Hazardous debris that has been treated using one of the specified extraction or destruction technologies in Table 1 of this subparagraph and that does not exhibit a characteristic of hazardous waste identified under Rule 1200-01-11-.02(3) after treatment is not a hazardous waste and need not be managed in a subtitle C facility. Hazardous debris contaminated with a listed waste that is treated by an immobilization technology specified in Table 1 is a hazardous waste and must be managed in a subtitle C facility.

4. Treatment residuals

(i) General requirements

Except as provided by subparts 4(ii) and 4(iv) of this subparagraph:

(I) Residue from the treatment of hazardous debris must be separated from the treated debris using simple physical or mechanical means; and

(II) Residue from the treatment of hazardous debris is subject to the waste-specific treatment standards provided by paragraph (3) of this Rule for the waste contaminating the debris.

(ii) Nontoxic debris

Residue from the deactivation of ignitable, corrosive, or reactive characteristic hazardous debris (other than cyanide-reactive) that is not contaminated with a contaminant subject to treatment defined by part 2 of this subparagraph, must be deactivated prior to land disposal and is not subject to the waste-specific treatment standards of paragraph (3) of this Rule.

(iii) Cyanide-reactive debris

Residue from the treatment of debris that is reactive because of cyanide must meet the treatment standards for D003 in " Treatment Standards for Hazardous Wastes" at subparagraph (3)(a) of this Rule.

(iv) Ignitable nonwastewater residue

Ignitable nonwastewater residue containing equal to or greater than 10% total organic carbon is subject to the technology specified in the treatment standard for D001: Ignitable Liquids.

(v) Residue from spalling

Layers of debris removed by spalling are hazardous debris that remain subject to the treatment standards of this subparagraph.

[a]TABLE 1.-ALTERNATIVE TREATMENT STANDARDS FOR HAZARDOUS DEBRIS [1]

Technology Description	Performance and/or Design and Operating Standard	Contaminant Restrictions[2]
A. Extraction Technologies:		
1. Physical Extraction		
a. Abrasive Blasting: Removal of contaminated debris surface layers using water and/or air pressure to propel a solid media (e.g., steel shot, aluminum oxide grit, plastic beads).	Glass, Metal, Plastic, Rubber: Treatment to a clean debris surface.[3] Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Removal of at least 0.6 cm of the surface layer; treatment to a clean debris surface.[3]	All Debris: None.
b. Scarification, Grinding, and Planing: Process utilizing striking piston heads, saws, or rotating grinding wheels such that contaminated debris surface layers are removed.	Same as above.	Same as above.
c. Spalling: Drilling or chipping holes at appropriate locations and depth in the contaminated debris surface and applying a tool which exerts a force on the sides of those holes such that the surface layer is removed. The surface layer removed remains hazardous debris subject to the debris treatment standards.	Same as above.	Same as above.
d. Vibratory Finishing: Process utilizing scrubbing media,	Same as above.	Same as above.

flushing fluid, and oscillating energy such that hazardous contaminants or contaminated debris surface layers are removed.[4]		
e. High Pressure Steam and Water Sprays: Application of water or steam sprays of sufficient temperature, pressure, residence time, agitation, surfactants, and detergents to remove hazardous contaminants from debris surfaces or to remove contaminated debris surface layers.	Same as above.	Same as above.
2. Chemical Extraction		
a. Water Washing and Spraying: Application of water sprays or water baths of sufficient temperature, pressure, residence time, agitation, surfactants, acids, bases, and detergents to remove hazardous contaminants from debris surfaces and surface pores or to remove contaminated debris surface layers.	All Debris: Treatment to a clean debris surface[3]; Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Debris must be no more than 1.2 cm (1/2 inch) in one dimension (i.e., thickness limit,[5] except that this thickness limit may be waived under an "Equivalent Technology" approval under .10(3)(c)2[8] debris surfaces must be in contact with water solution for at least 15 minutes	Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Contaminant must be soluble to at least 5% by weight in water solution or 5% by weight in emulsion; if debris is contaminated with a dioxin-listed waste,[6] an "Equivalent Technology" approval under .10(3)(c)2[8] must be obtained.[8]
b. Liquid Phase Solvent Extraction: Removal of hazardous contaminants from debris surfaces and surface pores by applying a nonaqueous liquid or liquid solution which causes the hazardous contaminants to enter the liquid phase and be flushed away from the debris along with the liquid or liquid solution while using appropriate agitation, temperature, and residence time.[4]	Same as above.	Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Same as above, except that contaminant must be soluble to at least 5% by weight in the solvent.
c. Vapor Phase Solvent Extraction: Application of an organic vapor using sufficient agitation, residence time, and temperature to cause	Same as above, except that brick, cloth, concrete, paper, pavement, rock and wood surfaces must be in contact with the organic vapor for at least 60	Same as above.

hazardous contaminants on contaminated debris surfaces and surface pores to enter the vapor phase and be flushed away with the organic vapor.[4]	minutes.	
3. Thermal Extraction		
a. High Temperature Metals Recovery: Application of sufficient heat, residence time, mixing, fluxing agents, and/or carbon in a smelting, melting, or refining furnace to separate metals from debris.	For refining furnaces, treated debris must be separated from treatment residuals using simple physical or mechanical means,[9] and, prior to further treatment, such residuals must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris.	Debris contaminated with a dioxin-listed waste:[5] Obtain an "Equivalent Technology" approval under .10(3)(c)2[8.]
b. Thermal Desorption: Heating in an enclosed chamber under either oxidizing or nonoxidizing atmospheres at sufficient temperature and residence time to vaporize hazardous contaminants from contaminated surfaces and surface pores and to remove the contaminants from the heating chamber in a gaseous exhaust gas.[7]	All Debris: Obtain an "Equivalent Technology" approval under .10(3)(c)2[8]; treated debris must be separated from treatment residuals using simple physical or mechanical means,[9] and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris. Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Debris must be no more than 10 cm (4 inches) in one dimension (i.e., thickness limit),[5] except that this thickness limit may be waived under the "Equivalent Technology" approval	All Debris: Metals other than mercury.
B. Destruction Technologies:		
1. Biological Destruction (Biodegradation): Removal of hazardous contaminants from debris surfaces and surface pores in an aqueous solution and biodegration of organic or nonmetallic inorganic compounds (i.e., inorganics that contain phosphorus, nitrogen, or sulfur) in units operated under either aerobic or anaerobic	All Debris: Obtain an "Equivalent Technology" approval under .10(3)(c)2[8]; treated debris must be separated from treatment residuals using simple physical or mechanical means,[9] and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste	All Debris: Metal contaminants.

conditions.	contaminating the debris. Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Debris must be no more than 1.2 cm (1/2 inch) in one dimension (i.e., thickness limit),[5] except that this thickness limit may be waived under the "Equivalent Technology" approval	
2. Chemical Destruction		
a. Chemical Oxidation: Chemical or electrolytic oxidation utilizing the following oxidation reagents (or waste reagents) or combination of reagents-(1) hypochlorite (e.g., bleach); (2) chlorine; (3) chlorine dioxide; (4) ozone or UV (ultraviolet light) assisted ozone; (5) peroxides; (6) persulfates; (7) perchlorates; (8) permanganates; and/or (9) other oxidizing reagents of equivalent destruction efficiency.[4] Chemical oxidation specifically includes what is referred to as alkaline chlorination.	All Debris: Obtain an "Equivalent Technology" approval under .10(3)(c)2[8] treated debris must be separated from treatment residuals using simple physical or mechanical means,[9] and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris. Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Debris must be no more than 1.2 cm (1/2 inch) in one dimension (i.e., thickness limit),[5] except that this thickness limit may be waived under the "Equivalent Technology" approval	All Debris: Metal contaminants.
b. Chemical Reduction: Chemical reaction utilizing the following reducing reagents (or waste reagents) or combination of reagents: (1) sulfur dioxide; (2) sodium, potassium, or alkali salts of sulfites, bisulfites, and metabisulfites, and polyethylene glycols (e.g., NaPEG and KPEG); (3) sodium hydrosulfide; (4) ferrous salts; and/or (5) other reducing reagents of equivalent efficiency.[4]	Same as above.	Same as above.
3. Thermal Destruction: Treatment in an incinerator operating in accordance with .05(15) or .06(15), a boiler or industrial furnace operating in	Treated debris must be separated from treatment residuals using simple physical or mechanical means,[9] and, prior to further treatment, such	Brick, Concrete, Glass, Metal, Pavement, Rock, Metal: Metals other than mercury, except that there are no metal restrictions for vitrification.

accordance with .09(8), or other thermal treatment unit operated in accordance with .06(27) or .05(16), but excluding for purposes of these debris treatment standards Thermal Desorption units.	residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris.	Debris contaminated with a dioxin-listed waste.[6] Obtain an "Equivalent Technology" approval under .10(3)(c),[8] except that this requirement does not apply to vitrification.
C. Immobilization Technologies:		
1. Macroencapsulation: Application of surface coating materials such as polymeric organics (e.g., resins and plastics) or use of a jacket of inert inorganic materials to substantially reduce surface exposure to potential leaching media.	Encapsulating material must completely encapsulate debris and be resistant to degradation by the debris and its contaminants and materials into which it may come into contact after placement (leachate, other waste, microbes).	None.
2. Microencapsulation: Stabilization of the debris with the following reagents (or waste reagents) such that the leachability of the hazardous contaminants is reduced: (1) Portland cement; or (2) lime/ pozzolans (e.g., fly ash and cement kiln dust). Reagents (e.g., iron salts, silicates, and clays) may be added to enhance the set/cure time and/or compressive strength, or to reduce the leachability of the hazardous constituents.[5]	Leachability of the hazardous contaminants must be reduced.	None.
3. Sealing: Application of an appropriate material which adheres tightly to the debris surface to avoid exposure of the surface to potential leaching media. When necessary to effectively seal the surface, sealing entails pretreatment of the debris surface to remove foreign matter and to clean and roughen the surface. Sealing materials include epoxy, silicone, and urethane compounds, but paint may not be used as a sealant	Sealing must avoid exposure of the debris surface to potential leaching media and sealant must be resistant to degradation by the debris and its contaminants and materials into which it may come into contact after placement (leachate, other waste, microbes).	None.

FOOTNOTE: [a]All rule citations contained herein are from Rule Chapter 1200-01-11.

FOOTNOTE: [1]Hazardous debris must be treated by either these standards or the waste-specific treatment standards for the waste contaminating the debris. The treatment standards must be met for each type of debris contained in a mixture of debris types, unless the debris is converted into treatment residue as a result of the treatment process. Debris treatment residuals are subject to the waste-specific treatment standards for the waste contaminating the debris.
FOOTNOTE: [2]Contaminant restriction means that the technology is not BDAT for that contaminant. If debris containing a restricted contaminant is treated by the technology, the contaminant must be subsequently treated by a technology for which it is not restricted in order to be land disposed (and excluded from Subtitle C regulation).
FOOTNOTE: [3]"Clean debris surface" means the surface, when viewed without magnification, shall be free of all visible contaminated soil and hazardous waste except that residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits may be present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area.
FOOTNOTE: [4]Acids, solvents, and chemical reagents may react with some debris and contaminants to form hazardous compounds. For example, acid washing of cyanide-contaminated debris could result in the formation of hydrogen cyanide. Some acids may also react violently with some debris and contaminants, depending on the concentration of the acid and the type of debris and contaminants. Debris treaters should refer to the safety precautions specified in Material Safety Data Sheets for various acids to avoid applying an incompatible acid to a particular debris/contaminant combination. For example, concentrated sulfuric acid may react violently with certain organic compounds, such as acrylonitrile.
FOOTNOTE: [5]If reducing the particle size of debris to meet the treatment standards results in material that no longer meets the 60 mm minimum particle size limit for debris, such material is subject to the waste-specific treatment standards for the waste contaminating the material, unless the debris has been cleaned and separated from contaminated soil and waste prior to size reduction. At a minimum, simple physical or mechanical means must be used to provide such cleaning and separation of nondebris materials to ensure that the debris surface is free of caked soil, waste, or other nondebris material.
FOOTNOTE: [6]Dioxin-listed wastes are EPA Hazardous Waste numbers F020, F021, F022, F023, F026, and F027.
FOOTNOTE: [7]Thermal desorption is distinguished from Thermal Destruction in that the primary purpose of Thermal Desorption is to volatilize contaminants and to remove them from the treatment chamber for subsequent destruction or other treatment.
FOOTNOTE: [8]The demonstration "Equivalent Technology" under part (3)(c)2 of this Rule must document that the technology treats contaminants subject to treatment to a level equivalent to that required by the performance and design and operating standards for other technologies in this table such that residual levels of hazardous contaminants will not pose a hazard to human health and the environment absent management controls.
FOOTNOTE: [9]Any soil, waste, and other nondebris material that remains on the debris surface (or remains mixed with the debris) after treatment is considered a treatment residual that must be separated from the debris using, at a minimum, simple physical or mechanical means. Examples of simple physical or mechanical means are vibratory or trommel screening or water washing. The debris surface need not be cleaned to a "clean debris surface" as defined in note 3 when separating treated debris from residue; rather, the surface must be free of caked soil, waste, or other nondebris material. Treatment residuals are subject to the waste-specific treatment standards for the waste contaminating the debris.

(g) Alternative Treatment Standards Based on HTMR [40 CFR 268.46]

For the treatment standards previously found in this section, refer to subparagraph (3)(a) of this Rule.

(h) (RESERVED) [40 CFR 268.47]

(i) Universal Treatment Standards [40 CFR 268.48]

1. Table UTS identifies the hazardous constituents, along with the nonwastewater and wastewater treatment standard levels, that are used to regulate most prohibited hazardous wastes with numerical limits. For determining compliance with treatment standards for underlying hazardous constituents as defined in part (1)(b)10 of this Rule, these treatment standards may not be exceeded. Compliance with these treatment standards is measured by an analysis of grab samples, unless otherwise noted in the following Table UTS.

UNIVERSAL TREATMENT STANDARDS (NOTE: NA means not applicable.)

REGULATED CONSTITUENT Common Name[6]	CAS[1] Number	Wastewater Standard	Nonwastewater Standard
		Concentration [2] in mg/l	Concentration[3] in mg/kg unless noted as "mg/l TCLP"
Organic Constituents			
Acenaphthylene	208-96-8	0.059	3.4
Acenaphthene	83-32-9	0.059	3.4
Acetone	67-64-1	0.28	160
Acetonitrile	75-05-8	5.6	38
Acetophenone	96-86-2	0.010	9.7
2-Acetylaminofluorene	53-96-3	0.059	140
Acrolein	107-02-8	0.29	NA
Acrylamide	79-06-1	19	23
Acrylonitrile	107-13-1	0.24	84
Aldicarb sulfone[6]	1646-88-4	0.056	0.28
Aldrin	309-00-2	0.021	0.066
4-Aminobiphenyl	92-67-1	0.13	NA

Aniline	62-53-3	0.81	14
o-Anisidine (2-methoxyaniline)	90-04-0	0.010	0.66
Anthracene	120-12-7	0.059	3.4
Aramite	140-57-8	0.36	NA
alpha-BHC	319-84-6	0.00014	0.066
beta-BHC	319-85-7	0.00014	0.066
delta-BHC	319-86-8	0.023	0.066
gamma-BHC	58-89-9	0.0017	0.066
Barban[6]	101-27-9	0.056	1.4
Bendiocarb[6]	22781-23-3	0.056	1.4
Benomyl[6]	17804-35-2	0.056	1.4
Benzene	71-43-2	0.14	10
Benz(a)anthracene	56-55-3	0.059	3.4
Benzal chloride	98-87-3	0.055	6.0
Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
Benzo(g,h,i)perylene	191-24-2	0.0055	1.8
Benzo(a)pyrene	50-32-8	0.061	3.4
Bromodichloromethane	75-27-4	0.35	15
Bromomethane/Methyl bromide	74-83-9	0.11	15
4-Bromophenyl phenyl ether	101-55-3	0.055	15
n-Butyl alcohol	71-36-3	5.6	2.6
Butylate[6]	2008-41-5	0.042	1.4
Butyl benzyl phthalate	85-68-7	0.017	28
2-sec-Butyl-4,6-dinitrophenol/Dinoseb	88-85-7	0.066	2.5
Carbaryl[6]	63-25-2	0.006	0.14

Carbenzadim[6]	10605-21-7	0.056	1.4
Carbofuran[6]	1563-66-2	0.006	0.14
Carbofuran phenol[6]	1563-38-8	0.056	1.4
Carbon disulfide	75-15-0	3.8	4.8 mg/l TCLP
Carbon tetrachloride	56-23-5	0.057	6.0
Carbosulfan[6]	55285-14-8	0.028	1.4
Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
p-Chloroaniline	106-47-8	0.46	16
Chlorobenzene	108-90-7	0.057	6.0
Chlorobenzilate	510-15-6	0.10	NA
2-Chloro-1,3-butadiene	126-99-8	0.057	0.28
Chlorodibromomethane	124-48-1	0.057	15
Chloroethane	75-00-3	0.27	6.0
bis(2-Chloroethoxy)methane	111-91-1	0.036	7.2
bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
Chloroform	67-66-3	0.046	6.0
bis(2-Chloroisopropyl)ether	39638-32-9	0.055	7.2
p-Chloro-m-cresol	59-50-7	0.018	14
2-Chloroethyl vinyl ether	110-75-8	0.062	NA
Chloromethane/Methyl chloride	74-87-3	0.19	30
2-Chloronaphthalene	91-58-7	0.055	5.6
2-Chlorophenol	95-57-8	0.044	5.7
3-Chloropropylene	107-05-1	0.036	30
Chrysene	218-01-9	0.059	3.4
p-Cresidine	120-71-8	0.010	0.66
o-Cresol	95-48-7	0.11	5.6

m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
m-Cumenyl methylcarbamate[6]	64-00-6	0.056	1.4
Cyclohexanone	108-94-1	0.36	0.75 mg/l TCLP
o,p'-DDD	53-19-0	0.023	0.087
p,p'-DDD	72-54-8	0.023	0.087
o,p'-DDE	3424-82-6	0.031	0.087
p,p'-DDE	72-55-9	0.031	0.087
o,p'-DDT	789-02-6	0.0039	0.087
p,p'-DDT	50-29-3	0.0039	0.087
Dibenz(a,h)anthracene	53-70-3	0.055	8.2
Dibenz(a,e)pyrene	192-65-4	0.061	NA
1,2-Dibromo-3-chloropropane	96-12-8	0.11	15
1,2-Dibromoethane/Ethylene dibromide	106-93-4	0.028	15
Dibromomethane	74-95-3	0.11	15
m-Dichlorobenzene	541-73-1	0.036	6.0
o-Dichlorobenzene	95-50-1	0.088	6.0
p-Dichlorobenzene	106-46-7	0.090	6.0
Dichlorodifluoromethane	75-71-8	0.23	7.2
1,1-Dichloroethane	75-34-3	0.059	6.0
1,2-Dichloroethane	107-06-2	0.21	6.0
1,1-Dichloroethylene	75-35-4	0.025	6.0
trans-1,2-Dichloroethylene	156-60-5	0.054	30
2,4-Dichlorophenol	120-83-2	0.044	14
2,6-Dichlorophenol	87-65-0	0.044	14
2,4-Dichlorophenoxyacetic acid/2,4-D	94-75-7	0.72	10

1,2-Dichloropropane	78-87-5	0.85	18
cis-1,3-Dichloropropylene	10061-01-5	0.036	18
trans-1,3-Dichloropropylene	10061-02-6	0.036	18
Dieldrin	60-57-1	0.017	0.13
Diethyl phthalate	84-66-2	0.20	28
p-Dimethylaminoazobenzene	60-11-7	0.13	NA
2, 4-Dimethylaniline (2, 4-xylidine)	95-68-1	0.010	0.66
2-4-Dimethyl phenol	105-67-9	0.036	14
Dimethyl phthalate	131-11-3	0.047	28
Di-n-butyl phthalate	84-74-2	0.057	28
1,4-Dinitrobenzene	100-25-4	0.32	2.3
4,6-Dinitro-o-cresol	534-52-1	0.28	160
2,4-Dinitrophenol	51-28-5	0.12	160
2,4-Dinitrotoluene	121-14-2	0.32	140
2,6-Dinitrotoluene	606-20-2	0.55	28
Di-n-octyl phthalate	117-84-0	0.017	28
Di-n-propylnitrosamine	621-64-7	0.40	14
1,4-Dioxane	123-91-1	12.0	170
Diphenylamine (difficult to distinguish from diphenylnitrosamine)	122-39-4	0.92	13
Diphenylnitrosamine (difficult to distinguish from diphenylamine)	86-30-6	0.92	13
1,2-Diphenylhydrazine	122-66-7	0.087	NA
Disulfoton	298-04-4	0.017	6.2
Dithiocarbamates (total) [6]	NA	0.028	28
Endosulfan I	959-98-8	0.023	0.066
Endosulfan II	33213-65-9	0.029	0.13
Endosulfan sulfate	1031-07-8	0.029	0.13

Endrin	72-20-8	0.0028	0.13
Endrin aldehyde	7421-93-4	0.025	0.13
EPTC[6]	759-94-4	0.042	1.4
Ethyl acetate	141-78-6	0.34	33
Ethyl benzene	100-41-4	0.057	10
Ethyl cyanide/Propanenitrile	107-12-0	0.24	360
Ethyl ether	60-29-7	0.12	160
bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
Ethyl methacrylate	97-63-2	0.14	160
Ethylene oxide	75-21-8	0.12	NA
Famphur	52-85-7	0.017	15
Fluoranthene	206-44-0	0.068	3.4
Fluorene	86-73-7	0.059	3.4
Formetanate hydrochloride[6]	23422-53-9	0.056	1.4
Heptachlor	76-44-8	0.0012	0.066
Heptachlor epoxide	1024-57-3	0.016	0.066
1, 2, 3, 4, 6, 7, 8-Heptachlorodibenzo-p-dioxin (1, 2, 3, 4, 6, 7, 8-HpCDD)	35822-46-9	0.000035	0.0025
1, 2, 3, 4, 6, 7, 8-Heptachlorodibenzofuran (1, 2, 3, 4, 6, 7, 8-HpCDF)	67562-39-4	0.000035	0.0025
1, 2, 3, 4, 7, 8, 9-Heptachlorodibenzofuran (1, 2, 3, 4, 7, 8, 9-HpCDF)	55673-89-7	0.000035	0.0025
Hexachlorobenzene	118-74-1	0.055	10
Hexachlorobutadiene	87-68-3	0.055	5.6
Hexachlorocyclopentadiene	77-47-4	0.057	2.4
HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
Hexachloroethane	67-72-1	0.055	30
Hexachloropropylene	1888-71-7	0.035	30

Indeno (1,2,3-c,d) pyrene	193-39-5	0.0055	3.4
Iodomethane	74-88-4	0.19	65
Isobutyl alcohol	78-83-1	5.6	170
Isodrin	465-73-6	0.021	0.066
Isosafrole	120-58-1	0.081	2.6
Kepone	143-50-0	0.0011	0.13
Methacrylonitrile	126-98-7	0.24	84
Methanol	67-56-1	5.6	0.75 mg/l TCLP
Methapyrilene	91-80-5	0.081	1.5
Methiocarb[6]	2032-65-7	0.056	1.4
Methomyl[6]	16752-77-5	0.028	0.14
Methoxychlor	72-43-5	0.25	0.18
3-Methylcholanthrene	56-49-5	0.0055	15
4,4-Methylene bis(2-chloroaniline)	101-14-4	0.50	30
Methylene chloride	75-09-2	0.089	30
Methyl ethyl ketone	78-93-3	0.28	36
Methyl isobutyl ketone	108-10-1	0.14	33
Methyl methacrylate	80-62-6	0.14	160
Methyl methansulfonate	66-27-3	0.018	NA
Methyl parathion	298-00-0	0.014	4.6
Metolcarb[6]	1129-41-5	0.056	1.4
Mexacarbate[6]	315-18-4	0.056	1.4
Molinate[6]	2212-67-1	0.042	1.4
Naphthalene	91-20-3	0.059	5.6
2-Naphthylamine	91-59-8	0.52	NA
o-Nitroaniline	88-74-4	0.27	14
p-Nitroaniline	100-01-6	0.028	28
Nitrobenzene	98-95-3	0.068	14

5-Nitro-o-toluidine	99-55-8	0.32	28
o-Nitrophenol	88-75-5	0.028	13
p-Nitrophenol	100-02-7	0.12	29
N-Nitrosodiethylamine	55-18-5	0.40	28
N-Nitrosodimethylamine	62-75-9	0.40	2.3
N-Nitroso-di-n-butylamine	924-16-3	0.40	17
N-Nitrosomethylethylamine	10595-95-6	0.40	2.3
N-Nitrosomorpholine	59-89-2	0.40	2.3
N-Nitrosopiperidine	100-75-4	0.013	35
N-Nitrosopyrrolidine	930-55-2	0.013	35
1, 2, 3, 4, 6, 7, 8, 9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	0.000063	0.005
1, 2, 3, 4, 6, 7, 8, 9-Octachlorodibenzofuran (OCDF)	39001-02-0	0.000063	0.005
Oxamyl[6]	23135-22-0	0.056	0.28
Parathion	56-38-2	0.014	4.6
Total PCBs (sum of all PCB isomers, or all Aroclors)[8]	1336-36-3	0.10	10
Pebulate [6]	1114-71-2	0.042	1.4
Pentachlorobenzene	608-93-5	0.055	10
PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
Pentachloroethane	76-01-7	0.055	6.0
Pentachloronitrobenzene	82-68-8	0.055	4.8
Pentachlorophenol	87-86-5	0.089	7.4
Phenacetin	62-44-2	0.081	16
Phenanthrene	85-01-8	0.059	5.6
Phenol	108-95-2	0.039	6.2
1, 3-Phenylenediamine	108-45-2	0.010	0.66

Phorate	298-02-2	0.021	4.6
Phthalic acid	100-21-0	0.055	28
Phthalic anhydride	85-44-9	0.055	28
Physostigmine[6]	57-47-6	0.056	1.4
Physostigmine salicylate[6]	57-64-7	0.056	1.4
Promecarb[6]	2631-37-0	0.056	1.4
Pronamide	23950-58-5	0.093	1.5
Propham[6]	122-42-9	0.056	1.4
Propoxur[6]	114-26-1	0.056	1.4
Prosulfocarb[6]	52888-80-9	0.042	1.4
Pyrene	129-00-0	0.067	8.2
Pyridine	110-86-1	0.014	16
Safrole	94-59-7	0.081	22
Silvex/2,4,5-TP	93-72-1	0.72	7.9
1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
1,1,2,2-Tetrachloroethane	79-34-5	0.057	6.0
Tetrachloroethylene	127-18-4	0.056	6.0
2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4
Thiodicarb[6]	59669-26-0	0.019	1.4
Thiophanate-methyl[6]	23564-05-8	0.056	1.4
Toluene	108-88-3	0.080	10
Toxaphene	8001-35-2	0.0095	2.6
Triallate[6]	2303-17-5	0.042	1.4
Tribromomethane/Bromoform	75-25-2	0.63	15
1,2,4-Trichlorobenzene	120-82-1	0.055	19

1,1,1-Trichloroethane	71-55-6	0.054	6.0
1,1,2-Trichloroethane	79-00-5	0.054	6.0
Trichloroethylene	79-01-6	0.054	6.0
Trichloromonofluoromethane	75-69-4	0.020	30
2,4,5-Trichlorophenol	95-95-4	0.18	7.4
2,4,6-Trichlorophenol	88-06-2	0.035	7.4
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T	93-76-5	0.72	7.9
1,2,3-Trichloropropane	96-18-4	0.85	30
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.057	30
Triethylamine[6]	101-44-8	0.081	1.5
tris-(2,3-Dibromopropyl) phosphate	126-72-7	0.11	0.10
Vernolate[6]	1929-77-7	0.042	1.4
Vinyl chloride	75-01-4	0.27	6.0
Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
Inorganic Constituents			
Antimony	7440-36-0	1.9	1.15 mg/l TCLP
Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
Barium	7440-39-3	1.2	21 mg/l TCLP
Beryllium	7440-41-7	0.82	1.22 mg/l TCLP
Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
Cyanides (Total)[4]	57-12-5	1.2	590
Cyanides (Amenable)[4]	57-12-5	0.86	30
Fluoride[5]	16984-48-8	35	NA

Lead	7439-92-1	0.69	0.75 mg/l TCLP
Mercury - Nonwastewater from Retort	7439-97-6	NA	0.20 mg/l TCLP
Mercury - All Others	7439-97-6	0.15	0.025 mg/lTCLP
Nickel	7440-02-0	3.98	11 mg/l TCLP
Selenium[7]	7782-49-2	0.82	5.7 mg/l TCLP
Silver	7440-22-4	0.43	0.14 mg/l TCLP
Sulfide[5]	18496-25-8	14	NA
Thallium	7440-28-0	1.4	0.20 mg/l TCLP
Vanadium[5]	7440-62-2	4.3	1.6 mg/l TCLP
Zinc[5]	7440-66-6	2.61	4.3 mg/l TCLP

Footnotes to Universal Treatment Standards Table:

1. CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.
2. Concentration standards for wastewaters are expressed in mg/L and are based on analysis of composite samples.
3. Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of Rule 1200-01-11-.06(15) or .05(15), or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in part (3)(a)4 of this Rule. All concentration standards for nonwastewaters are based on analysis of grab samples.
4. Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010C or 9012B, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846, listed in 40 CFR 260.11, Rule 1200-01-11-.02(2)(b)1, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.
5. These constituents are not " underlying hazardous constituents" in characteristic wastes, according to the definition at part (1)(b)10 of this Rule.
6. Between August 26, 1998 and March 4, 1999, these constituents are not " underlying hazardous constituents" as defined in part (1)(b)10 of this Rule.

7. This constituent is not an underlying hazardous constituent as defined at Rule 1200-01-11-.10(1)(b)10 because its UTS level is greater than its TC level, thus a treated selenium waste would always be characteristically hazardous unless it is treated to below its characteristic level.
8. This standard is temporarily deferred for soil exhibiting a hazardous characteristic due to D004-D011 only.

(j) Alternative LDR Treatment Standards for Contaminated Soil [40 CFR 268.49]

1. Applicability. You must comply with LDRs prior to placing soil that exhibits a characteristic of hazardous waste, or exhibited a characteristic of hazardous waste at the time it was generated, into a land disposal unit. The following chart describes whether you must comply with LDRs prior to placing soil contaminated by listed hazardous waste into a land disposal unit:

If LDRs...	And If LDRs...	And If ...	Then You...
applied to the listed waste when it contaminated the soil*	apply to the listed waste now	----------	must comply with LDRs
didn' t apply to the listed waste when it contaminated the soil*	apply to the listed waste now	the soil is determined to contain the listed waste when the soil is first generated	must comply with LDRs
didn' t apply to the listed waste when it contaminated the soil*	apply to the listed waste now	the soil is determined not to contain the listed waste when the soil is first generated	needn' t comply with LDRs
didn' t apply to the listed waste when it contaminated the soil*	don' t apply to the listed waste now	----------	needn' t comply with LDRs
* For dates of LDR applicability, see Rule 1200-01-11-.10 Appendix VII. To determine the date any given listed hazardous waste contaminated any given volume of soil, use the last date any given listed hazardous waste was placed into any given land disposal unit or, in the case of an accidental spill, the date of the spill.			

2. Prior to land disposal, contaminated soil identified by part 1 of this subparagraph as needing to comply with LDRs must be treated according to the applicable treatment standards specified in part 3 of this subparagraph or according to the Universal Treatment Standards specified in subparagraph (i) of this paragraph applicable to the contaminating listed hazardous waste and/or the applicable characteristic of hazardous waste if the soil is characteristic. The treatment standards specified in part 3 of this subparagraph and the Universal Treatment Standards may be modified through a treatment variance approved in accordance with subparagraph (e) of this paragraph.

3. Treatment standards for contaminated soils. Prior to land disposal, contaminated soil identified by part 1 of this subparagraph as needing to comply with LDRs must be treated according to all the standards specified in this part or according to the Universal Treatment Standards specified in subparagraph (i) of this paragraph.

(i) All soils. Prior to land disposal, all constituents subject to treatment must be treated as follows:

(I) For non-metals except carbon disulfide, cyclohexanone, and methanol, treatment must achieve 90 percent reduction in total constituent concentrations, except as provided by item (III) of this subpart.

(II) For metals and carbon disulfide, cyclohexanone, and methanol, treatment must achieve 90 percent reduction in constituent concentrations as measured in leachate from the treated media (tested according to the TCLP) or 90 percent reduction in total constituent concentrations (when a metal removal treatment technology is used), except as provided by item (III) of this subpart.

(III) When treatment of any constituent subject to treatment to a 90 percent reduction standard would result in a concentration less than 10 times the Universal Treatment Standard for that constituent, treatment to achieve constituent concentrations less than 10 times the universal treatment standard is not required. Universal Treatment Standards are identified in subparagraph (i) of this paragraph, Table UTS.

(ii) Soils that exhibit the characteristic of ignitability, corrosivity or reactivity. In addition to the treatment required by subpart 3(i) of this subparagraph, prior to land disposal, soils that exhibit the characteristic of ignitability, corrosivity, or reactivity must be treated to eliminate these characteristics.

(iii) Soils that contain nonanalyzable constituents. In addition to the treatment requirements of subparts 3(i) and (ii) of this subparagraph, prior to land disposal, the following treatment is required for soils that contain nonanalyzable constituents:

(I) For soil that also contains only analyzable and nonanalyzable organic constituents, treatment of the analyzable organic constituents to the levels specified in subparts 3(i) and (ii) of this subparagraph; or,

(II) For soil that contains only nonanalyzable constituents, treatment by the method(s) specified in subparagraph (c) of this paragraph for the waste contained in the soil.

4. Constituents subject to treatment. When applying the soil treatment standards in part 3 of this subparagraph, constituents subject to treatment are any constituents listed in subparagraph (i) of this paragraph, Table UTS--Universal Treatment Standards that are reasonably expected to be present in any given volume of contaminated soil, except fluoride, selenium, sulfides, vanadium and zinc, and that are present at concentrations greater than ten times the universal treatment standard. PCBs are not constituent subject to treatment in any given volume of soil which exhibits the toxicity characteristic solely because of the presence of metals.

5. Management of treatment residuals. Treatment residuals from treating contaminated soil identified by part 1 of this subparagraph as needing to comply with LDRs must be managed as follows:

(i) Soil residuals are subject to the treatment standards of this subparagraph;

(ii) Non-soil residuals are subject to:

(I) For soils contaminated by listed hazardous waste, the RCRA Subtitle C standards applicable to the listed hazardous waste; and

(II) For soils that exhibit a characteristic of hazardous waste, if the non-soil residual also exhibits a characteristic of hazardous waste, the treatment standards applicable to the characteristic hazardous waste.

(4) Prohibitions on Storage [40 CFR 268 Subpart E]

(a) Prohibitions on Storage of Restricted Wastes [40 CFR 268.50]

1. Except as provided in this subparagraph, the storage of hazardous wastes restricted from land disposal under paragraph (2) of this Rule or federal RCRA section 3004 is prohibited, unless the following conditions are met:

(i) A generator stores such wastes in tanks, containers, or containment buildings on-site solely for the purpose of the accumulation of such quantities of hazardous waste as necessary to facilitate proper recovery, treatment, or disposal and the generator complies with the requirements in Rule 1200-01-11-.03(4)(e) and Rules 1200-01-11-.06 and .05.

(ii) An owner/operator of a hazardous waste treatment, storage, or disposal facility stores such wastes in tanks, containers, or containment buildings solely for the purpose of the accumulation of such quantities of hazardous waste as necessary to facilitate proper recovery, treatment, or disposal and:

(I) Each container is clearly marked to identify its contents and the date each period of accumulation begins;

(II) Each tank is clearly marked with a description of its contents, the quantity of each hazardous waste received, and the date each period of accumulation begins, or such information for each tank is recorded and maintained in the operating record at that facility. Regardless of whether the tank itself is marked, an owner/operator must comply with the operating record requirements specified in Rule 1200-01-11-.06(5)(d) or Rule 1200-01-11.05(5)(d).

(iii) A transporter stores manifested shipments of such wastes at a transfer facility for 10 days or less.

2. An owner/operator of a treatment, storage or disposal facility may store such wastes for up to one year unless the Department can demonstrate that such storage was not solely for the purpose of accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal.

3. An owner/operator of a treatment, storage or disposal facility may store such wastes beyond one year; however, the owner/operator bears the burden of proving that such storage was solely for the purpose of accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal.

4. If a generator's waste is exempt from a prohibition on the type of land disposal utilized for the waste (for example, because of an approved case-by-case extension under subparagraph (1)(e) of this Rule, an approved petition under subparagraph (1)(f) of this Rule, or a national capacity variance under paragraph (2) of this Rule), the prohibition in part 1 of this subparagraph does not apply during the period of such exemption.

5. The prohibition in part 1 of this subparagraph does not apply to hazardous wastes that meet the treatment standards specified under subparagraphs (3)(b),(c), and (d) of this Rule or the treatment standards specified under the variance in subparagraph (3)(e) of this Rule, or, where treatment standards have not been specified, is in compliance with the applicable prohibitions specified in subparagraph (2)(c) of this Rule or federal RCRA section 3004.

6. Liquid hazardous wastes containing polychlorinated biphenyls (PCBs) at concentrations greater than or equal to 50 ppm must be stored at a facility that meets the requirements of 40 CFR 761.65(b) and must be removed from storage and treated or disposed as required by this Rule within one year of the date when such wastes are first placed into storage. The provisions of part 3 of this subparagraph do not apply to such PCB wastes prohibited under subparagraph (2)(c) of this Rule.

7. The prohibition and requirements in this paragraph do not apply to hazardous remediation wastes stored in a staging pile approved pursuant to Rule 1200-01-11-.06(22)(e).

(5) APPENDICES [40 CFR 268 APPENDICES]

Appendix I - (RESERVED) [40 CFR 268 Appendix I]

Appendix II - (RESERVED) [40 CFR 268 Appendix II]

Appendix III – List of Halogenated Organic Compounds Regulated Under Subparagraph (2)(c) of this Rule [40 CFR 268 Appendix III]

In determining the concentration of HOCs in a hazardous waste for purposes of the Subparagraph (2)(c) of this Rule land disposal prohibition, Tennessee has defined the HOCs that must be included in a calculation as any compounds having a carbon-halogen bond which are listed in this Appendix (see Rule1200-01-11-.10(1)(b)).

Appendix III to Rule 1200-01-11-.10 consists of the following compounds:

I. Volatiles

1. Bromodichloromethane
2. Bromomethane
3. Carbon Tetrachloride
4. Chlorobenzene
5. 2-Chloro-1.3-butadiene
6. Chlorodibromomethane
7. Chloroethane
8. 2-Chloroethyl vinyl ether
9. Chloroform
10. Chloromethane
11. 3-Chloropropene
12. 1.2-Dibromo-3-chloropropane
13. 1.2-Dibromomethane
14. Dibromomethane
15. Trans-1.4-Dichloro-2-butene
16. Dichlorodifluoromethane
17. 1.1-Dichloroethane
18. 1.2-Dichloroethane
19. 1.1-Dichloroethylene
20. Trans-1.2-Dichloroethene
21. 1.2-Dichloropropane
22. Trans-1,3-Dichloropropene
23. cis-1,3-Dichloropropene
24. Iodomethane
25. Methylene chloride
26. 1, 1, 1, 2-Tetrachloroethane
27. 1, 1, 2, 2-Tetrachloroethane
28. Tetrachloroethene
29. Tribromomethane
30. 1, 1, 1-Trichloroethane
31. 1, 1, 2-Trichloroethane
32. Trichlorothene
33. Trichloromonofluoromethane
34. 1, 2, 3-Thrichloropropane
35. Vinyl Chloride

II. Semivolatiles

1. Bis(2chloroethoxy) ethane
2. Bis(2-chloroethyl) ether
3. Bis(2-chloroisopropyl) ether
4. p-Chloroaniline
5. Chlorobenzilate
6. p-Chloro-m-cresol
7. 2-Chloroanphthalene
8. 2-Chlorphenol
9. 3-Chloropropionitrile
10. m-Dichlorobenzene

11. o-Dichlorobenzene
12. p-Dichlorobenzene
13. 3.3’ -Dichlorobenzidine
14. 2.4-Dichlorophenol
15. 2.6-Dichlorophenol
16. Hexachlorobenzene
17. Hexachlorobutadiene
18. Hexachlorocyclopentadiene
19. Hexachloroethane
20. Hexachloroprophene
21. Hexachlorpropene
22. 4.4’ -Methylenebis (2-chloroanaline)
23. Pentachlorobenzene
24. Pentachloroethane
25. Pentachloronitrobenzene
26. Pentachlorophenol
27. Pronamide
28. 1, 2, 4, 5-Tetrachlorobenzene
29. 2, 3, 4, 6-Tetrachlorophenol
30. 1, 2, 4-Trichlorobenzene
31. 2, 4, 5-Trichlorophenol
32. 2, 4, 6-Trichlorophenol
33. Tris(2, 3-dibromopropyl) phosphate

III. Organochlorine Pesticides

1. Aldrin
2. alpha-BHC
3. beta-BHC
4. delta-BHC
5. gamma-BHC
6. Chlorodane
7. DDD
8. DDE
9. DDT
10. Dieldrin
11. Endosulfan I
12. Endosulfan II
13. Endrin
14. Endrin aldehyde
15. Heptachlor
16. Heptachlor epoxide
17. Isodrin
18. Kepone
19. Methoxyclor
20. Toxaphene

IV. Phenoxyacetic Acid Herbicides

1. 2,4-Dichlorophenoxyacetic acid

2. Silvex
3. 2, 4, 5,-T

V. PCBs

1. Aroclor 1016
2. Aroclor 1221
3. Aroclor 1232
4. Aroclor 1242
5. Aroclor 1248
6. Aroclor 1254
7. Aroclor 1260
8. PCBs not otherwise specified

VI. Dioxins and Furans

1. Hexachlorodibenzo-p-dioxins
2. Hexachlorodibenzofuran
3. Pentachlorodibenzo-p-dioxins
4. Pentachlorodibenzofuran
5. Tetrachlorodibenzo-p-dioxins
6. Tetrachlorodibenzofuran
7. 2, 3, 7, 8-Tetrachlorodibenzo-p-dioxin

Appendix IV-Wastes Excluded From Lab Packs Under the Alternative Treatment Standards of Part (3)(c)3 of this Rule [40 CFR 268 Appendix IV]

Hazardous waste with the following Hazardous Waste Codes may not be placed in lab packs under the alternative lab pack treatment standards of part (3)(c)3 of this Rule: D009, F019, K003, K004, K005, K006, K062, K071, K100, K106, P010, P011, P012, P076, P078, U134, U151.

Appendix V -- (RESERVED) [40 CFR 268 Appendix V]

Appendix VI -- Recommended Technologies to Achieve Deactivation of Characteristics in Subparagraph (3)(c) of this Rule [40 CFR 268 Appendix VI]

The treatment standard for many characteristic wastes is stated in subparagraph (3)(a) of this Rule, Table of Treatment Standards as " Deactivation and meet UTS." EPA has determined that many technologies, when used alone or in combination, can achieve the deactivation portion of the treatment standard. Characteristic wastes that are not managed in a facility regulated by the Clean Water Act (CWA) or in a CWA-equivalent facility, and that also contain underlying hazardous constituents (see part (1)(b)9 of this Rule) must be treated not only by the " deactivating" technology to remove the characteristic, but also to achieve the universal treatment standards (UTS) for underlying hazardous constituents. The following appendix presents a partial list of technologies, utilizing the five letter technology codes established in subparagraph (3)(c) of this Rule, Table 1, that may be useful in meeting the treatment standard. Use of these specific technologies is not mandatory and does not preclude direct reuse, recovery, and/or the use of other pretreatment technologies, provided deactivation is achieved and underlying hazardous constituents are treated to achieve the UTS.

Waste Code/Subcategory[a]	Nonwastewaters	Wastewaters

D001 Ignitable Liquids based on .02(3)(b)1(i)-- Low TOC Nonwastewater Subcategory (containing 1% to <10% TOC)	RORGS INCIN WETOX CHOXD BIODG	n.a[b]
D001 Ignitable Liquids based on .02(3)(b)1(i) -- Ignitable Wastewater Subcategory (containing <1% TOC)	n.a.	RORGS INCIN WETOX CHOXD BIODG
D001 Compressed Gases based on .02(3)(b)1(iii)	RCGAS INCIN FSUBS ADGAS fb. INCIN ADGAS fb. (CHOXD; or CHRED)	n.a.
D001 Ignitable Reactives based on .02(3)(b)1(ii)	WTRRX CHOXD CHRED STABL INCIN	n.a.
D001 Ignitable Oxidizers based on .02(3)(b)1(iv)	CHRED INCIN	CHRED INCIN
D002 Acid Subcategory based on .02(3)(c)1(i) with pH less than or equal to 2	RCORR NEUTR INCIN	NEUTR INCIN
D002 Alkaline Subcategory based on .02(3)(c)1(i)with pH greater than or equal to 12.5	NEUTR INCIN	NEUTR INCIN
D002 Other Corrosives based on .02(3)(c)1(ii)	CHOXD CHRED INCIN STABL	CHOXD CHRED INCIN
D003 Water Reactives based on .02(3)(d)1(ii),(iii), and (iv)	INCIN WTRRX CHOXD CHRED	n.a.
D003 Reactive Sulfides based on .02(3)(d)1(v)	CHOXD CHRED INCIN STABL	CHOXD CHRED BIODG INCIN

D003 Explosives based on .02(3)(d)1(vi),(vii), and (viii)	INCIN CHOXD CHRED	INCIN CHOXD CHRED BIODG CARBN
D003 Other Reactives based on .02(3)(d)1(i)	INCIN CHOXD CHRED	INCIN CHOXD CHRED BIODG CARBN
K044 Wastewater treatment sludges from the manufacturing and processing of explosives	CHOXD CHRED INCIN	CHOXD CHRED BIODG CARBN INCIN
K045 Spent carbon from the treatment of wastewaters containing explosives	CHOXD CHRED INCIN	CHOXD CHRED BIODG CARBN INCIN
K047 Pink/red water from TNT operations	CHOXD CHRED INCIN	CHOXD CHRED BIODG CARBN INCIN

FOOTNOTE: [a]All Rule citations contained herein are from Rule Chapter 1200-01-11.
FOOTNOTE: [b]Note: "n.a." stands for "not applicable"; "fb." stands for "followed by".

Appendix VII - Effective Dates of Surface Disposed Wastes Regulated in the LDRs
[40 CFR 268 Appendix VII]

TABLE 1.-EFFECTIVE DATES OF SURFACE DISPOSED WASTES [(NON-SOIL AND DEBRIS) REGULATED IN THE LDRs[a] - COMPREHENSIVE LIST]

Waste Code	Waste Category	Effective Date
D001[c]	All (except High TOC Ignitable Liquids)	Aug. 9, 1993
D001	High TOC Ignitable Liquids	Aug. 8, 1990
D002[c]	All	Aug. 9, 1993
D003	Newly identified surface-disposed elemental phosphorus processing wastes	May 26, 2000
D004	Newly identified D004 and mineral processing wastes	Aug. 24, 1998
D004	Mixed radioactive/newly identified D004 or	May 26, 2000

	mineral processing wastes	
D005	Newly identified D005 and mineral processing wastes	Aug. 24, 1998
D005	Mixed radioactive/newly identified D005 or mineral processing wastes	May 26, 2000
D006	Newly identified D006 and mineral processing wastes	Aug. 24, 1998
D006	Mixed radioactive/newly identified D006 or mineral processing wastes	May 26, 2000
D007	Newly identified D007 and mineral processing wastes	Aug. 24, 1998
D007	Mixed radioactive/newly identified D007 or mineral processing wastes	May 26, 2000
D008	Newly identified D008 and mineral processing wastes	Aug. 24, 1998
D008	Mixed radioactive/newly identified D008 or mineral processing wastes	May 26, 2000
D009	Newly identified D009 and mineral processing wastes	Aug. 24, 1998
D009	Mixed radioactive/newly identified D009 or mineral processing wastes	May 26, 2000
D010	Newly identified D010 and mineral processing wastes	Aug. 24, 1998
D010	Mixed radioactive/newly identified D010 or mineral processing wastes	May 26, 2000
D011	Newly identified D011 and mineral processing wastes	Aug. 24, 1998
D011	Mixed radioactive/newly identified D011 or mineral processing wastes	May 26, 2000
D012 (that exhibit the toxicity characteristic based on the TCLP)[d]	All	Dec. 14, 1994
D013 (that exhibit the toxicity characteristic based on the TCLP)[d]	All	Dec. 14, 1994
D014 (that exhibit the toxicity characteristic	All	Dec. 14, 1994

based on the TCLP)[d]		
D015 (that exhibit the toxicity characteristic based on the TCLP)[d]	All	Dec. 14, 1994
D016 (that exhibit the the toxicity characteristic based on the TCLP)[d]	All	Dec. 14, 1994
D017 (that exhibit the toxicity characteristic based on the TCLP)[d]	All	Dec. 14, 1994
D018	Mixed with radioactive wastes	Sept. 19, 1996
D018	All others	Dec. 19, 1994
D019	Mixed with radioactive wastes	Sept. 19, 1996
D019	All others	Dec. 19, 1994
D020	Mixed with radioactive wastes	Sept. 19, 1996
D020	All others	Dec. 19, 1994
D021	Mixed with radioactive wastes	Sept. 19, 1996
D021	All others	Dec. 19, 1994
D022	Mixed with radioactive wastes	Sept. 19, 1996
D022	All others	Dec. 19, 1994
D023	Mixed with radioactive wastes	Sept. 19, 1996
D023	All others	Dec. 19, 1994
D024	Mixed with radioactive wastes	Sept. 19, 1996
D024	All others	Dec. 19, 1994
D025	Mixed with radioactive wastes	Sept. 19, 1996

D025	All others	Dec. 19, 1994
D026	Mixed with radioactive wastes	Sept. 19, 1996
D026	All others	Dec. 19, 1994
D027	Mixed with radioactive wastes	Sept. 19, 1996
D027	All others	Dec. 19, 1994
D028	Mixed with radioactive wastes	Sept. 19, 1996
D028	All others	Dec. 19, 1994
D029	Mixed with radioactive wastes	Sept. 19, 1996
D029	All others	Dec. 19, 1994
D030	Mixed with radioactive wastes	Sept. 19. 1996
D030	All others	Dec. 19, 1994
D031	Mixed with radioactive wastes	Sept. 19, 1996
D031	All others	Dec. 19, 1994
D032	Mixed with radioactive wastes	Sept. 19, 1996
D032	All others	Dec. 19, 1994
D033	Mixed with radioactive wastes	Sept. 19, 1996
D033	All others	Dec. 19, 1994
D034	Mixed with radioactive wastes	Sept. 19, 1996
D034	All others	Dec. 19, 1994
D035	Mixed with radioactive wastes	Sept. 19, 1996
D035	All others	Dec. 19, 1994
D036	Mixed with radioactive wastes	Sept. 19, 1996
D036	All others	Dec. 19, 1994
D037	Mixed with radioactive wastes	Sept. 19, 1996
D037	All others	Dec. 19, 1994
D038	Mixed with radioactive wastes	Sept. 19, 1996

D038	All others	Dec. 19, 1994
D039	Mixed with radioactive wastes	Sept. 19, 1996
D039	All others	Dec. 19, 1994
D040	Mixed with radioactive wastes	Sept. 19, 1996
D040	All others	Dec. 19, 1994
D041	Mixed with radioactive wastes	Sept. 19, 1996
D041	All others	Dec. 19, 1994
D042	Mixed with radioactive wastes	Sept. 19, 1996
D042	All others	Dec. 19, 1994
D043	Mixed with radioactive wastes	Sept. 19, 1996
D043	All others	Dec. 19, 1994
F001	Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids	Nov. 8, 1988
F001	All others	Nov. 8, 1986
F002 (1,1,2-trichloro-ethane)	Wastewater and Nonwastewater	Aug. 8, 1990
F002	Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids	Nov. 8, 1988
F002	All others	Nov. 8, 1986
F003	Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids	Nov. 8, 1988
F003	All others	Nov. 8, 1986
F004	Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids	Nov. 8, 1986
F004	All others	Nov. 8, 1986

F005 (benzene, 2-ethoxy ethanol, 2-nitropropane)	Wastewater and Nonwastewater	Aug. 8, 1990
F005	Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids	Nov. 8, 1988
F005	All others	Nov. 8, 1986
F006	Wastewater	Aug. 8, 1990
F006	Nonwastewater	Aug. 8, 1988
F006 (cyanides)	Nonwastewater	July 8, 1989
F007	All	July 8, 1989
F008	All	July 8, 1989
F009	All	July 8, 1989
F010	All	June 8, 1989
F011 (cyanides)	Nonwastewater	Dec. 8, 1989
F011	All others	July 8, 1989
F012 (cyanides)	Nonwastewater	Dec. 8, 1989
F012	All others	July 8, 1989
F019	All	Aug. 8, 1990
F020	All	Nov. 8, 1988
F021	All	Nov. 8, 1988
F025	All	Aug. 8, 1990
F026	All	Nov. 8, 1988
F027	All	Nov. 8, 1988
F028	All	Nov. 8, 1988

F032	Mixed with radioactive wastes	Aug. 12, 1999
F032	All others	Aug. 12, 1997
F034	Mixed with radioactive wastes	Aug. 12, 1999
F034	All others	Aug. 12, 1997
F035	Mixed with radioactive wastes	May 12, 1999
F035	All others	Aug. 12, 1997
F037	Not generated from surface impoundment cleanouts or closures	June 30, 1993
F037	Generated from surface impoundment cleanouts or closures	June 30, 1994
F037	Mixed with radioactive wastes	June 30, 1994
F038	Not generated from surface impoundment cleanouts or closures	June 30, 1993
F038	Generated from surface impoundment cleanouts or closures	June 30, 1994
F038	Mixed with radioactive wastes	June 30, 1994
F039	Wastewater	Aug. 8, 1990
F039	Nonwastewater	May 8, 1992
K001 (organics)[b]	All	Aug. 8, 1988
K001	All others	Aug. 8, 1988
K002	All	Aug. 8, 1990
K003	All	Aug. 8, 1990
K004	Wastewater	Aug. 8, 1990
K004	Nonwastewater	Aug. 8, 1988
K005	Wastewater	Aug. 8, 1990
K005	Nonwastewater	June 8, 1989
K006	All	Aug. 8, 1990
K007	Wastewater	Aug. 8, 1990

K007	Nonwastewater	June 8, 1989
K008	Wastewater	Aug. 8, 1990
K008	Nonwastewater	Aug. 8, 1988
K009	All	June 8, 1989
K010	All	June 8, 1989
K011	Wastewater	Aug. 8, 1990
K011	Nonwastewater	June 8, 1989
K013	Wastewater	Aug. 8, 1990
K013	Nonwastewater	June 8, 1989
K014	Wastewater	Aug. 8, 1990
K014	Nonwastewater	June 8, 1989
K015	Wastewater	Aug. 8, 1988
K015	Nonwastewater	Aug. 8, 1990
K016	All	Aug. 8, 1988
K017	All	Aug. 8, 1990
K018	All	Aug. 8, 1988
K019	All	Aug. 8, 1988
K020	All	Aug. 8, 1988
K021	Wastewater	Aug. 8, 1990
K021	Nonwastewater	Aug. 8, 1988
K022	Wastewater	Aug. 8, 1990
K022	Nonwastewater	Aug. 8, 1988
K023	All	June 8, 1989
K024	All	Aug. 8, 1988
K025	Wastewater	Aug. 8, 1990
K025	Nonwastewater	Aug. 8, 1988
K026	All	Aug. 8, 1990

K027	All	June 8, 1989
K028 (metals)	Nonwastewater	Aug. 8, 1990
K028	All others	June 8, 1989
K029	Wastewater	Aug. 8, 1990
K029	Nonwastewater	June 8, 1989
K030	All	Aug. 8, 1988
K031	Wastewater	Aug. 8, 1990
K031	Nonwastewater	May 8, 1992
K032	All	Aug. 8, 1990
K033	All	Aug. 8, 1990
K034	All	Aug. 8, 1990
K035	All	Aug. 8, 1990
K036	Wastewater	June 8, 1989
K036	Nonwastewater	Aug. 8, 1988
K037[b]	Wastewater	Aug. 8, 1988
K037	Nonwastewater	Aug. 8, 1988
K038	All	June 8, 1989
K039	All	June 8, 1989
K040	All	June 8, 1989
K041	All	Aug. 8, 1990
K042	All	Aug. 8, 1990
K043	All	June 8, 1989
K044	All	Aug. 8, 1988
K045	All	Aug. 8, 1988
K046 (Nonreactive)	Nonwastewater	Aug. 8, 1988
K046	All others	Aug. 8, 1990

K047	All	Aug. 8, 1988
K048	Wastewater	Aug. 8, 1990
K048	Nonwastewater	Nov. 8, 1990
K049	Wastewater	Aug. 8, 1990
K049	Nonwastewater	Nov. 8, 1990
K050	Wastewater	Aug. 8, 1990
K050	Nonwastewater	Nov. 8, 1990
K051	Wastewater	Aug. 8, 1990
K051	Nonwastewater	Nov. 8, 1990
K052	Wastewater	Aug. 8, 1990
K052	Nonwastewater	Nov. 8, 1990
K060	Wastewater	Aug. 8, 1990
K060	Nonwastewater	Aug. 8, 1988
K061	Wastewater	Aug. 8, 1990
K061	Nonwastewater	June 30, 1992
K062	All	Aug. 8, 1988
K069 (Non-Calcium Sulfate)	Nonwastewater	Aug. 8, 1988
K069	All others	Aug. 8, 1990
K071	All	Aug. 8, 1990
K073	All	Aug. 8, 1990
K083	All	Aug. 8, 1990
K084	Wastewater	Aug. 8, 1990
K084	Nonwastewater	May 8, 1992
K085	All	Aug. 8, 1990
K086 (organics)[b]	All	Aug. 8, 1988

K086	All others	Aug. 8, 1988
K087	All	Aug. 8, 1988
K088	Mixed with radioactive wastes	Apr. 8, 1998
K088	All others	Oct. 8, 1997
K093	All	June 8, 1989
K094	All	June 8, 1989
K095	Wastewater	Aug. 8, 1990
K095	Nonwastewater	June 8, 1989
K096	Wastewater	Aug. 8, 1990
K096	Nonwastewater	June 8, 1989
K097	All	Aug. 8, 1990
K098	All	Aug. 8, 1990
K099	All	Aug. 8, 1988
K100	Wastewater	Aug. 8, 1990
K100	Nonwastewater	Aug. 8, 1988
K101 (organics)	Wastewater	Aug. 8, 1988
K101 (metals)	Wastewater	Aug. 8, 1990
K101 (organics)	Nonwastewater	Aug. 8, 1988
K101 (metals)	Nonwastewater	May 8, 1992
K102 (organics)	Wastewater	Aug. 8, 1988
K102 (metals)	Wastewater	Aug. 8, 1990
K102 (organics)	Nonwastewater	Aug. 8, 1988
K102 (metals)	Nonwastewater	May 8, 1992
K103	All	Aug. 8, 1988
K104	All	Aug. 8, 1988

K105	All	Aug. 8, 1990
K106	Wastewater	Aug. 8, 1990
K106	Nonwastewater	May 8, 1992
K107	Mixed with radioactive wastes	June 30, 1994
K107	All others	Nov. 9, 1992
K108	Mixed with radioactive wastes	June 30, 1994
K108	All others	Nov. 9, 1992
K109	Mixed with radioactive wastes	June 30, 1994
K109	All others	Nov. 9, 1992
K110	Mixed with radioactive wastes	June 30, 1994
K110	All others	Nov. 9, 1992
K111	Mixed with radioactive wastes	June 30, 1994
K111	All others	Nov. 9, 1992
K112	Mixed with radioactive wastes	June 30, 1994
K112	All others	Nov. 9, 1992
K113	All	June 8, 1989
K114	All	June 8, 1989
K115	All	June 8, 1989
K116	All	June 8, 1989
K117	Mixed with radioactive wastes	June 30, 1994
K117	All others	Nov. 9, 1992
K118	Mixed with radioactive wastes	June 30, 1994
K118	All others	Nov. 9, 1992
K123	Mixed with radioactive wastes	June 30, 1994
K123	All others	Nov. 9, 1992
K124	Mixed with radioactive wastes	June 30, 1994

K124	All others	Nov. 9, 1992
K125	Mixed with radioactive wastes	June 30, 1994
K125	All others	Nov. 9, 1992
K126	Mixed with radioactive wastes	June 30, 1994
K126	All others	Nov. 9, 1992
K131	Mixed with radioactive wastes	June 30, 1994
K131	All others	Nov. 9, 1992
K132	Mixed with radioactive wastes	June 30, 1994
K132	All others	Nov. 9, 1992
K136	Mixed with radioactive wastes	June 30, 1994
K136	All others	Nov. 9, 1992
K141	Mixed with radioactive wastes	Sep. 19, 1996
K141	All others	Dec. 19, 1994
K142	Mixed with radioactive wastes	Sep. 19, 1996.
K142	All others	Dec. 19, 1994
K143	Mixed with radioactive wastes	Sep. 19, 1996
K143	All others	Dec. 19, 1994
K144	Mixed with radioactive wastes	Sep. 19, 1996
K144	All others	Dec. 19, 1994
K145	Mixed with radioactive wastes	Sep. 19, 1996
K145	All others	Dec. 19, 1994
K147	Mixed with radioactive wastes	Sep. 19, 1996
K147	All others	Dec. 19, 1994
K148	Mixed with radioactive wastes	Sep. 19, 1996
K148	All others	Dec. 19, 1994
K149	Mixed with radioactive wastes	Sep. 19, 1996
K149	All others	Dec. 19, 1994

K150	Mixed with radioactive wastes	Sep. 19, 1996
K150	All others	Dec. 19, 1994
K151	Mixed with radioactive wastes	Sep. 19, 1996
K151	All others	Dec. 19, 1994
K156	Mixed with radioactive wastes	Apr. 8, 1998
K156	All others	July 8, 1996
K157	Mixed with radioactive wastes	Apr. 8, 1998
K157	All others	July 8, 1996
K158	Mixed with radioactive wastes	Apr. 8, 1998
K158	All others	July 8, 1996
K159	Mixed with radioactive wastes	Apr. 8, 1998
K159	All others	July 8, 1996
K160	Mixed with radioactive wastes	Apr. 8, 1998
K160	All others	July 8, 1996
K161	Mixed with radioactive wastes	Apr. 8, 1998
K161	All others	July 8, 1996
P001	All	Aug. 8, 1990
P002	All	Aug. 8, 1990
P003	All	Aug. 8, 1990
P004	All	Aug. 8, 1990
P005	All	Aug. 8, 1990
P006	All	Aug. 8, 1990
P007	All	Aug. 8, 1990
P008	All	Aug. 8, 1990
P009	All	Aug. 8, 1990
P010	Wastewater	Aug. 8, 1990

P010	Nonwastewater	May 8, 1992
P011	Wastewater	Aug. 8, 1990
P011	Nonwastewater	May 8, 1992
P012	Wastewater	Aug. 8, 1990
P012	Nonwastewater	May 8, 1992
P013 (barium)	Nonwastewater	Aug. 8, 1990
P013	All others	June 8, 1989
P014	All	Aug. 8, 1990
P015	All	Aug. 8, 1990
P016	All	Aug. 8, 1990
P017	All	Aug. 8, 1990
P018	All	Aug. 8, 1990
P020	All	Aug. 8, 1990
P021	All	June 8, 1989
P022	All	Aug. 8, 1990
P023	All	Aug. 8, 1990
P024	All	Aug. 8, 1990
P026	All	Aug. 8, 1990
P027	All	Aug. 8, 1990
P028	All	Aug. 8, 1990
P029	All	June 8, 1989
P030	All	June 8, 1989
P031	All	Aug. 8, 1990
P033	All	Aug. 8, 1990
P034	All	Aug. 8, 1990
P036	Wastewater	Aug. 8, 1990
P036	Nonwastewater	May 8, 1992

P037	All	Aug. 8, 1990
P038	Wastewater	Aug. 8, 1990
P038	Nonwastewater	May 8, 1992
P039	All	June 8, 1989
P040	All	June 8, 1989
P041	All	June 8, 1989
P042	All	Aug. 8, 1990
P043	All	June 8, 1989
P044	All	June 8, 1989
P045	All	Aug. 8, 1990
P046	All	Aug. 8, 1990
P047	All	Aug. 8, 1990
P048	All	Aug. 8, 1990
P049	All	Aug. 8, 1990
P050	All	Aug. 8, 1990
P051	All	Aug. 8, 1990
P054	All	Aug. 8, 1990
P056	All	Aug. 8, 1990
P057	All	Aug. 8, 1990
P058	All	Aug. 8, 1990
P059	All	Aug. 8, 1990
P060	All	Aug. 8, 1990
P062	All	June 8, 1989
P063	All	June 8, 1989
P064	All	Aug. 8, 1990
P065	Wastewater	Aug. 8, 1990

P065	Nonwastewater	May 8, 1992
P066	All	Aug. 8, 1990
P067	All	Aug. 8, 1990
P068	All	Aug. 8, 1990
P069	All	Aug. 8, 1990
P070	All	Aug. 8, 1990
P071	All	June 8, 1989
P072	All	Aug. 8, 1990
P073	All	Aug. 8, 1990
P074	All	June 8, 1989
P075	All	Aug. 8, 1990
P076	All	Aug. 8, 1990
P077	All	Aug. 8, 1990
P078	All	Aug. 8, 1990
P081	All	Aug. 8, 1990
P082	All	Aug. 8, 1990
P084	All	Aug. 8, 1990
P085	All	June 8, 1989
P087	All	May 8, 1992
P088	All	Aug. 8, 1990
P089	All	June 8, 1989
P092	Wastewater	Aug. 8, 1990
P092	Nonwastewater	May 8, 1992
P093	All	Aug. 8, 1990
P094	All	June 8, 1989
P095	All	Aug. 8, 1990
P096	All	Aug. 8, 1990

P097	All	June 8, 1989
P098	All	June 8, 1989
P099 (silver)	Wastewater	Aug. 8, 1990
P099	All others	June 8, 1989
P101	All	Aug. 8, 1990
P102	All	Aug. 8, 1990
P103	All	Aug. 8, 1990
P104 (silver)	Wastewater	Aug. 8, 1990
P104	All others	June 8, 1989
P105	All	Aug. 8, 1990
P106	All	June 8, 1989
P108	All	Aug. 8, 1990
P109	All	June 8, 1989
P110	All	Aug. 8, 1990
P111	All	June 8, 1989
P112	All	Aug. 8, 1990
P113	All	Aug. 8, 1990
P114	All	Aug. 8, 1990
P115	All	Aug. 8, 1990
P116	All	Aug. 8, 1990
P118	All	Aug. 8, 1990
P119	All	Aug. 8, 1990
P120	All	Aug. 8, 1990
P121	All	June 8, 1989
P122	All	Aug. 8, 1990
P123	All	Aug. 8, 1990

P127	Mixed with radioactive wastes	Apr. 8, 1998
P127	All others	July 8, 1996
P128	Mixed with radioactive wastes	Apr. 8, 1998
P128	All others	July 8, 1996
P185	Mixed with radioactive wastes	Apr. 8, 1998
P185	All others	July 8, 1996
P188	Mixed with radioactive wastes	Apr. 8, 1998
P188	All others	July 8, 1996
P189	Mixed with radioactive wastes	Apr. 8, 1998
P189	All others	July 8, 1996
P190	Mixed with radioactive wastes	Apr. 8, 1998
P190	All others	July 8, 1996
P191	Mixed with radioactive wastes	Apr. 8, 1998
P191	All others	July 8, 1996
P192	Mixed with radioactive wastes	Apr. 8, 1998
P192	All others	July 8, 1996
P194	Mixed with radioactive wastes	Apr. 8, 1998
P194	All others	July 8, 1996
P196	Mixed with radioactive wastes	Apr. 8, 1998
P196	All others	July 8, 1996
P197	Mixed with radioactive wastes	Apr. 8, 1998
P197	All others	July 8, 1996
P198	Mixed with radioactive wastes	Apr. 8, 1998
P198	All others	July 8, 1996
P199	Mixed with radioactive wastes	Apr. 8, 1998
P199	All others	July 8, 1996
P201	Mixed with radioactive wastes	Apr. 8, 1998

P201	All others	July 8, 1996
P202	Mixed with radioactive wastes	Apr. 8, 1998
P202	All others	July 8, 1996
P203	Mixed with radioactive wastes	Apr. 8, 1998
P203	All others	July 8, 1996
P204	Mixed with radioactive wastes	Apr. 8, 1998
P204	All others	July 8, 1996
P205	Mixed with radioactive wastes	Apr. 8, 1998
P205	All others	July 8, 1996
U001	All	Aug. 8, 1990
U002	All	Aug. 8, 1990
U003	All	Aug. 8, 1990
U004	All	Aug. 8, 1990
U005	All	Aug. 8, 1990
U006	All	Aug. 8, 1990
U007	All	Aug. 8, 1990
U008	All	Aug. 8, 1990
U009	All	Aug. 8, 1990
U010	All	Aug. 8, 1990
U011	All	Aug. 8, 1990
U012	All	Aug. 8, 1990
U014	All	Aug. 8, 1990
U015	All	Aug. 8, 1990
U016	All	Aug. 8, 1990
U017	All	Aug. 8, 1990
U018	All	Aug. 8, 1990

U019	All	Aug. 8, 1990
U020	All	Aug. 8, 1990
U021	All	Aug. 8, 1990
U022	All	Aug. 8, 1990
U023	All	Aug. 8, 1990
U024	All	Aug. 8, 1990
U025	All	Aug. 8, 1990
U026	All	Aug. 8, 1990
U027	All	Aug. 8, 1990
U028	All	June 8, 1989
U029	All	Aug. 8, 1990
U030	All	Aug. 8, 1990
U031	All	Aug. 8, 1990
U032	All	Aug. 8, 1990
U033	All	Aug. 8, 1990
U034	All	Aug. 8, 1990
U035	All	Aug. 8, 1990
U036	All	Aug. 8, 1990
U037	All	Aug. 8, 1990
U038	All	Aug. 8, 1990
U039	All	Aug. 8, 1990
U041	All	Aug. 8, 1990
U042	All	Aug. 8, 1990
U043	All	Aug. 8, 1990
U044	All	Aug. 8, 1990
U045	All	Aug. 8, 1990
U046	All	Aug. 8, 1990

U047	All	Aug. 8, 1990
U048	All	Aug. 8, 1990
U049	All	Aug. 8, 1990
U050	All	Aug. 8, 1990
U051	All	Aug. 8, 1990
U052	All	Aug. 8, 1990
U053	All	Aug. 8, 1990
U055	All	Aug. 8, 1990
U056	All	Aug. 8, 1990
U057	All	Aug. 8, 1990
U058	All	June 8, 1989
U059	All	Aug. 8, 1990
U060	All	Aug. 8, 1990
U061	All	Aug. 8, 1990
U062	All	Aug. 8, 1990
U063	All	Aug. 8, 1990
U064	All	Aug. 8, 1990
U066	All	Aug. 8, 1990
U067	All	Aug. 8, 1990
U068	All	Aug. 8, 1990
U069	All	June 30, 1992
U070	All	Aug. 8, 1990
U071	All	Aug. 8, 1990
U072	All	Aug. 8, 1990
U073	All	Aug. 8, 1990
U074	All	Aug. 8, 1990

U075	All	Aug. 8, 1990
U076	All	Aug. 8, 1990
U077	All	Aug. 8, 1990
U078	All	Aug. 8, 1990
U079	All	Aug. 8, 1990
U080	All	Aug. 8, 1990
U081	All	Aug. 8, 1990
U082	All	Aug. 8, 1990
U083	All	Aug. 8, 1990
U084	All	Aug. 8, 1990
U085	All	Aug. 8, 1990
U086	All	Aug. 8, 1990
U087	All	June 8, 1989
U088	All	June 8, 1989
U089	All	Aug. 8, 1990
U090	All	Aug. 8, 1990
U091	All	Aug. 8, 1990
U092	All	Aug. 8, 1990
U093	All	Aug. 8, 1990
U094	All	Aug. 8, 1990
U095	All	Aug. 8, 1990
U096	All	Aug. 8, 1990
U097	All	Aug. 8, 1990
U098	All	Aug. 8, 1990
U099	All	Aug. 8, 1990
U101	All	Aug. 8, 1990
U102	All	June 8, 1989

U103	All	Aug. 8, 1990
U105	All	Aug. 8, 1990
U106	All	Aug. 8, 1990
U107	All	June 8, 1989
U108	All	Aug. 8, 1990
U109	All	Aug. 8, 1990
U110	All	Aug. 8, 1990
U111	All	Aug. 8, 1990
U112	All	Aug. 8, 1990
U113	All	Aug. 8, 1990
U114	All	Aug. 8, 1990
U115	All	Aug. 8, 1990
U116	All	Aug. 8, 1990
U117	All	Aug. 8, 1990
U118	All	Aug. 8, 1990
U119	All	Aug. 8, 1990
U120	All	Aug. 8, 1990
U121	All	Aug. 8, 1990
U122	All	Aug. 8, 1990
U123	All	Aug. 8, 1990
U124	All	Aug. 8, 1990
U125	All	Aug. 8, 1990
U126	All	Aug. 8, 1990
U127	All	Aug. 8, 1990
U128	All	Aug. 8, 1990
U129	All	Aug. 8, 1990

U130	All	Aug. 8, 1990
U131	All	Aug. 8, 1990
U132	All	Aug. 8, 1990
U133	All	Aug. 8, 1990
U134	All	Aug. 8, 1990
U135	All	Aug. 8, 1990
U136	Wastewater	Aug. 8, 1990
U136	Nonwastewater	May 8, 1992
U137	All	Aug. 8, 1990
U138	All	Aug. 8, 1990
U140	All	Aug. 8, 1990
U141	All	Aug. 8, 1990
U142	All	Aug. 8, 1990
U143	All	Aug. 8, 1990
U144	All	Aug. 8, 1990
U145	All	Aug. 8, 1990
U146	All	Aug. 8, 1990
U147	All	Aug. 8, 1990
U148	All	Aug. 8, 1990
U149	All	Aug. 8, 1990
U150	All	Aug. 8, 1990
U151	Wastewater	Aug. 8, 1990
U151	Nonwastewater	May 8, 1992
U152	All	Aug. 8, 1990
U153	All	Aug. 8, 1990
U154	All	Aug. 8, 1990
U155	All	Aug. 8, 1990

U156	All	Aug. 8, 1990
U157	All	Aug. 8, 1990
U158	All	Aug. 8, 1990
U159	All	Aug. 8, 1990
U160	All	Aug. 8, 1990
U161	All	Aug. 8, 1990
U162	All	Aug. 8, 1990
U163	All	Aug. 8, 1990
U164	All	Aug. 8, 1990
U165	All	Aug. 8, 1990
U166	All	Aug. 8, 1990
U167	All	Aug. 8, 1990
U168	All	Aug. 8, 1990
U169	All	Aug. 8, 1990
U170	All	Aug. 8, 1990
U171	All	Aug. 8, 1990
U172	All	Aug. 8, 1990
U173	All	Aug. 8, 1990
U174	All	Aug. 8, 1990
U176	All	Aug. 8, 1990
U177	All	Aug. 8, 1990
U178	All	Aug. 8, 1990
U179	All	Aug. 8, 1990
U180	All	Aug. 8, 1990
U181	All	Aug. 8, 1990
U182	All	Aug. 8, 1990

U183	All	Aug. 8, 1990
U184	All	Aug. 8, 1990
U185	All	Aug. 8, 1990
U186	All	Aug. 8, 1990
U187	All	Aug. 8, 1990
U188	All	Aug. 8, 1990
U189	All	Aug. 8, 1990
U190	All	June 8, 1989.
U191	All	Aug. 8, 1990
U192	All	Aug. 8, 1990
U193	All	Aug. 8, 1990
U194	All	June 8, 1989
U196	All	Aug. 8, 1990
U197	All	Aug. 8, 1990
U200	All	Aug. 8, 1990
U201	All	Aug. 8, 1990
U202	All	Aug. 8, 1990
U203	All	Aug. 8, 1990
U204	All	Aug. 8, 1990
U205	All	Aug. 8, 1990
U206	All	Aug. 8, 1990
U207	All	Aug. 8, 1990
U208	All	Aug. 8, 1990
U209	All	Aug. 8, 1990
U210	All	Aug. 8, 1990
U211	All	Aug. 8, 1990
U213	All	Aug. 8, 1990

U214	All	Aug. 8, 1990
U215	All	Aug. 8, 1990
U216	All	Aug. 8, 1990
U217	All	Aug. 8, 1990
U218	All	Aug. 8, 1990
U219	All	Aug. 8, 1990
U220	All	Aug. 8, 1990
U221	All	June 8, 1989.
U222	All	Aug. 8, 1990
U223	All	June 8, 1989.
U225	All	Aug. 8, 1990
U226	All	Aug. 8, 1990
U227	All	Aug. 8, 1990
U228	All	Aug. 8, 1990
U234	All	Aug. 8, 1990
U235	All	June 8, 1989.
U236	All	Aug. 8, 1990
U237	All	Aug. 8, 1990
U238	All	Aug. 8, 1990
U239	All	Aug. 8, 1990
U240	All	Aug. 8, 1990
U243	All	Aug. 8, 1990
U244	All	Aug. 8, 1990
U246	All	Aug. 8, 1990
U247	All	Aug. 8, 1990
U248	All	Aug. 8, 1990

U249	All	Aug. 8, 1990
U271	Mixed with radioactive wastes	Apr. 8, 1998
U271	All others	July 8, 1996
U277	Mixed with radioactive wastes	Apr. 8, 1998
U277	All others	July 8, 1996
U278	Mixed with radioactive wastes	Apr. 8, 1998
U278	All others	July 8, 1996
U279	Mixed with radioactive wastes	Apr. 8, 1998
U279	All others	July 8, 1996
U280	Mixed with radioactive wastes	Apr. 8, 1998
U280	All others	July 8, 1996
U328	Mixed with radioactive wastes	June 30, 1994
U328	All others	Nov. 9, 1992
U353	Mixed with radioactive wastes	June 30, 1994
U353	All others	Nov. 9, 1992
U359	Mixed with radioactive wastes	June 30, 1994
U359	All others	Nov. 9, 1992
U364	Mixed with radioactive wastes	Apr. 8, 1998
U364	All others	July 8, 1996
U365	Mixed with radioactive wastes	Apr. 8, 1998
U365	All others	July 8, 1996
U366	Mixed with radioactive wastes	Apr. 8, 1998
U366	All others	July 8, 1996
U367	Mixed with radioactive wastes	Apr. 8, 1998
U367	All others	July 8, 1996
U372	Mixed with radioactive wastes	Apr. 8, 1998
U372	All others	July 8, 1996

U373	Mixed with radioactive wastes	Apr. 8, 1998
U373	All others	July 8, 1996
U375	Mixed with radioactive wastes	Apr. 8, 1998
U375	All others	July 8, 1996
U376	Mixed with radioactive wastes	Apr. 8, 1998
U376	All others	July 8, 1996
U377	Mixed with radioactive wastes	Apr. 8, 1998
U377	All others	July 8, 1996
U378	Mixed with radioactive wastes	Apr. 8, 1998
U378	All others	July 8, 1996
U379	Mixed with radioactive wastes	Apr. 8, 1998
U379	All others	July 8, 1996
U381	Mixed with radioactive wastes	Apr. 8, 1998
U381	All others	July 8, 1996
U382	Mixed with radioactive wastes	Apr. 8, 1998
U382	All others	July 8, 1996
U383	Mixed with radioactive wastes	Apr. 8, 1998
U383	All others	July 8, 1996
U384	Mixed with radioactive wastes	Apr. 8, 1998
U384	All others	July 8, 1996
U385	Mixed with radioactive wastes	Apr. 8, 1998
U385	All others	July 8, 1996
U386	Mixed with radioactive wastes	Apr. 8, 1998
U386	All others	July 8, 1996
U387	Mixed with radioactive wastes	Apr. 8, 1998
U387	All others	July 8, 1996

U389	Mixed with radioactive wastes	Apr. 8, 1998
U389	All others	July 8, 1996
U390	Mixed with radioactive wastes	Apr. 8, 1998
U390	All others	July 8, 1996
U391	Mixed with radioactive wastes	Apr. 8, 1998
U391	All others	July 8, 1996
U392	Mixed with radioactive wastes	Apr. 8, 1998
U392	All others	July 8, 1996
U393	Mixed with radioactive wastes	Apr. 8, 1998
U393	All others	July 8, 1996
U394	Mixed with radioactive wastes	Apr. 8, 1998
U394	All others	July 8, 1996
U395	Mixed with radioactive wastes	Apr. 8, 1998
U395	All others	July 8, 1996
U396	Mixed with radioactive wastes	Apr. 8, 1998
U396	All others	July 8, 1996
U400	Mixed with radioactive wastes	Apr. 8, 1998
U400	All others	July 8, 1996
U401	Mixed with radioactive wastes	Apr. 8, 1998
U401	All others	July 8, 1996
U402	Mixed with radioactive wastes	Apr. 8, 1998
U402	All others	July 8, 1996
U403	Mixed with radioactive wastes	Apr. 8, 1998
U403	All others	July 8, 1996
U404	Mixed with radioactive wastes	Apr. 8, 1998
U404	All others	July 8, 1996
U407	Mixed with radioactive wastes	Apr. 8, 1998

U407	All others	July 8, 1996
U409	Mixed with radioactive wastes	Apr. 8, 1998
U409	All others	July 8, 1996
U410	Mixed with radioactive wastes	Apr. 8, 1998
U410	All others	July 8, 1996
U411	Mixed with radioactive wastes	Apr. 8, 1998
U411	All others	July 8, 1996

FOOTNOTE: [a]This table does not include mixed radioactive wastes (from the First, Second, and Third Third rules) which received national capacity variance until May 8, 1992. This table also does not include contaminated soil and debris wastes.
FOOTNOTE: [b]The standard was revised in the Third Third Final Rule (55 FR 22520, June 1, 1990).
FOOTNOTE: [c]The standard was revised in the Third Third Emergency Rule (58 FR 29860, May 24, 1993); the original effective date was August 8, 1990.
FOOTNOTE: [d]The standard was revised in the Phase II Final Rule (59 FR 47982, Sept. 19, 1994); the original effective date was August 8, 1990.
FOOTNOTE: [e]The standards for selected reactive wastes were revised in the Phase III Final Rule (61 FR 15566, Apr. 8, 1996); the original effective date was August 8, 1990.

TABLE 2.-SUMMARY OF EFFECTIVE DATES OF LAND DISPOSAL RESTRICTIONS FOR CONTAMINATED SOIL AND DEBRIS (CSD)

Restricted Hazardous Waste in CSD		Effective Date
1.	Solvent-(F001-F005) and dioxin-(F020-F023 and F026-F028) containing soil and debris from CERCLA response of RCRA corrective actions	Nov. 8, 1990
2.	Soil and debris not from CERCLA response or RCRA corrective actions contaminated with less than 1% total solvents (F001-F005) or dioxins (F020-F023 and F026-F028)	Nov. 8, 1988
3.	All soil and debris contaminated with First Third wastes for which treatment standards are based on incineration	Aug. 8, 1990
4.	All soil and debris contaminated with Second Third wastes for which treatment standards are based on incineration	June 8, 1991
5.	All soil and debris contaminated with Third Third wastes or, First or Second Third “ soft hammer” wastes which had treatment standards promulgated in the	May 8, 1992

	Third Third rule, for which treatment standards are based on incineration, vitrification, or mercury retorting, acid leaching followed by chemical precipitation, or thermal recovery of metals; as well as all inorganic solids debris contaminated with D004-D011 wastes, and all soil and debris contaminated with mixed RCRA/radioactive wastes	
6.	Soil and debris contaminated with D012-D043, K141-K145, and K147-K151 wastes	Dec. 19, 1994
7.	Debris (only) contaminated with F037, F038, K107-K112, K117, K118, K123-K126, K131, K132, K136, U328, U353, U359	Dec. 19, 1994
8.	Soil and debris contaminated with K156-K161, P127, P128, P188-P192, P194, P196-P199, P201-P205, U271, U277-U280, U364-U367, U372, U373, U375-U379, U381-U387, U389-U396, U400-U404, U407, and U409-U411 wastes	July 8, 1996
9.	Soil and debris contaminated with K088 wastes	Oct. 8, 1997
10.	Soil and debris contaminated with radioactive wastes mixed with K088, K156-K161, P127, P128, P188-P192, P194, P196-P199, P201-P205, U271, U277-U280, U364-U367, U372, U373, U375-U379, U381-U387, U389-U396, U400-U404, U407, and U409-U411 wastes	Apr. 8, 1998
11.	Soil and debris contaminated with F032, F034, and F035	May 12, 1997
12.	Soil and debris contaminated with newly identified D004-D011 toxicity characteristic wastes and mineral processing wastes	Aug. 24, 1998
13.	Soil and debris contaminated with mixed radioactive newly identified D004-D011 characteristic wastes and mineral processing wastes	May 26, 2000

(NOTE: Appendix VII is provided for the convenience of the reader.)
(NOTE: A contaminated soil and debris rule will be promulgated in the future.)

Appendix VIII - LDR Effective Dates of Injected Prohibited Hazardous Waste [40 CFR 268 Appendix

VIII]

NATIONAL CAPACITY LDR VARIANCES FOR UIC WASTES[a]

Waste Code	Waste Category	Effective Date
F001-F005	All spent F001-F005 solvent containing less than 1 percent total F001-F005 solvent constituents	Aug. 8, 1990
D001 (except High TOC Ignitable Liquids Subcategory)[c]	All	Feb. 10, 1994
D001 (High TOC Ignitable Characteristic Liquids Subcategory)	Nonwastewater	Sept. 19, 1995
D002[b]	All	May 8, 1992
D002 [c]	All	Feb. 10, 1994
D003 (cyanides)	All	May 8, 1992
D003 (sulfides)	All	May 8, 1992
D003 (explosives, reactives)	All	May 8, 1992
D007	All	May 8, 1992
D009	Nonwastewater	May 8, 1992
D012	All	Sept. 19, 1995
D013	All	Sept. 19, 1995
D014	All	Sept. 19, 1995
D015	All	Sept. 19, 1995
D016	All	Sept. 19, 1995
D017	All	Sept. 19, 1995
D018	All, including mixed with radioactive wastes	Apr. 8, 1998
D019	All, including mixed with radioactive wastes	Apr. 8, 1998
D020	All, including mixed with radioactive wastes	Apr. 8, 1998
D021	All, including mixed with	Apr. 8, 1998

	radioactive wastes	
D022	All, including mixed with radioactive wastes	Apr. 8, 1998
D023	All, including mixed radioactive wastes	Apr. 8, 1998
D024	All, including mixed radioactive wastes	Apr. 8, 1998
D025	All, including mixed radioactive wastes	Apr. 8, 1998
D026	All, including mixed radioactive wastes	Apr. 8, 1998
D027	All, including mixed radioactive wastes	Apr. 8, 1998
D028	All, including mixed radioactive wastes	Apr. 8, 1998
D029	All, including mixed radioactive wastes	Apr. 8, 1998
D030	All, including mixed radioactive wastes	Apr. 8, 1998
D031	All, including mixed radioactive wastes	Apr. 8, 1998
D032	All, including mixed radioactive wastes	Apr. 8, 1998
D033	All, including mixed radioactive wastes	Apr. 8, 1998
D034	All, including mixed radioactive wastes	Apr. 8, 1998
D035	All, including mixed radioactive wastes	Apr. 8, 1998
D036	All, including mixed radioactive wastes	Apr. 8, 1998
D037	All, including mixed radioactive wastes	Apr. 8, 1998
D038	All, including mixed radioactive wastes	Apr. 8, 1998

D039	All, including mixed radioactive wastes	Apr. 8, 1998
D040	All, including mixed radioactive wastes	Apr. 8, 1998
D041	All, including mixed radioactive wastes	Apr. 8, 1998
D042	All, including mixed radioactive wastes	Apr. 8, 1998
D043	All, including mixed radioactive wastes	Apr. 8, 1998
F007	All	June 8, 1991
F032	All, including mixed radioactive wastes	May 12, 1999
F034	All, including mixed radioactive wastes	May 12, 1999
F035	All, including mixed radioactive wastes	May 12, 1999
F037	All	Nov. 8, 199
F038	All	Nov. 8, 1992
F039	Wastewater	May 8, 1992
K009	Wastewater	June 8, 1991
K011	Nonwastewater	June 8, 1991
K011	Wastewater	May 8, 1992
K013	Nonwastewater	June 8, 1991
K013	Wastewater	May 8, 1992
K014	All	May 8, 1992
K016 (dilute)	All	June 8, 1991
K049	All	Aug. 8, 1990
K050	All	Aug. 8, 1990
K051	All	Aug. 8, 1990
K052	All	Aug. 8, 1990

K062	All	Aug. 8, 1990
K071	All	Aug. 8, 1990
K088	All	Jan. 8, 1997
K104	All	Aug. 8, 1990
K107	All	Nov. 8, 1992.
K108	All	Nov. 9, 1992
K109	All	Nov. 9, 1992
K110	All	Nov. 9, 1992
K111	All	Nov. 9, 1992
K112	All	Nov. 9, 1992
K117	All	June 30, 1995
K118	All	June 30, 1995
K123	All	Nov. 9, 1992
K124	All	Nov. 9, 1992
K125	All	Nov. 9, 1992
K126	All	Nov. 9, 1992
K131	All	June 30, 1995
K132	All	June 30, 1995
K136	All	Nov. 9, 1992
K141	All	Dec. 19, 1994
K142	All	Dec. 19, 1994
K143	All	Dec. 19, 1994
K144	All	Dec. 19, 1994
K145	All	Dec. 19, 1994
K147	All	Dec. 19, 1994
K148	All	Dec. 19, 1994

K149	All	Dec. 19, 1994
K150	All	Dec. 19, 1994
K151	All	Dec. 19, 1994
K156	All	July 8, 1996
K157	All	July 8, 1996.
K158	All	July 8, 1996
K159	All	July 8, 1996
K160	All	July 8, 1996
K161	All	July 8, 1996
NA	Newly identified mineral processing wastes from titanium dioxide production and mixed radioactive/newly identified D004-D011 characteristic wastes and mineral process wastes	May 26, 2000.
P127	All	July 8, 1996
P128	All	July 8, 1996
P185	All	July 8, 1996
P188	All	July 8, 1996
P189	All	July 8, 1996
P190	All	July 8, 1996
P191	All	July 8, 1996
P192	All	July 8, 1996
P194	All	July 8, 1996
P196	All	July 8, 1996
P197	All	July 8, 1996
P198	All	July 8, 1996
P199	All	July 8, 1996
P201	All	July 8, 1996

P202	All	July 8, 1996
P203	All	July 8, 1996
P204	All	July 8, 1996
P205	All	July 8, 1996
U271	All	July 8, 1996
U277	All	July 8, 1996
U278	All	July 8, 1996
U279	All	July 8, 1996
U280	All	July 8, 1996
U328	All	Nov. 9, 1992
U353	All	Nov. 9, 1992
U359	All	Nov. 9, 1992
U364	All	July 8, 1996
U365	All	July 8, 1996
U366	All	July 8, 1996
U367	All	July 8, 1996
U372	All	July 8, 1996
U373	All	July 8, 1996
U375	All	July 8, 1996
U376	All	July 8, 1996
U377	All	July 8, 1996
U378	All	July 8, 1996
U379	All	July 8, 1996
U381	All	July 8, 1996
U382	All	July 8, 1996
U383	All	July 8, 1996
U384	All	July 8, 1996

U385	All	July 8, 1996
U386	All	July 8, 1996
U387	All	July 8, 1996
U389	All	July 8, 1996
U390	All	July 8, 1996
U391	All	July 8, 1996
U392	All	July 8, 1996
U395	All	July 8, 1996
U396	All	July 8, 1996
U400	All	July 8, 1996
U401	All	July 8, 1996
U402	All	July 8, 1996
U403	All	July 8, 1996
U404	All	July 8, 1996
U407	All	July 8, 1996
U409	All	July 8, 1996
U410	All	July 8, 1996
U411	All	July 8, 1996

FOOTNOTE: [a]Wastes that are deep well disposed on-site receive a six-month variance, with restrictions effective in November 1990.
FOOTNOTE: [b]Deepwell injected D002 liquids with a pH less than 2 must meet the California List treatment standards on August 8, 1990.
FOOTNOTE: [c]Managed in systems defined in 40 CFR 144.6(e) and 14.6(e) as Class V injection wells, that do not engage in CWA-equivalent treatment before injection.
(NOTE: This table is provided for the convenience of the reader.)

Appendix IX – (Reserved) Extraction Procedure (EP) Toxicity Test Method and Structural Integrity Test (Method 1310B) [40 CFR 268 Appendix IX]

(* Note: The EP (Method 1310B) is published in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, listed in 40 CFR 260.11; Rule 1200-01-11-.01(2)(b)1.)

Appendix X - (RESERVED) [40 CFR 268 Appendix X]

Appendix XI - Metal Bearing Wastes Prohibited from Dilution in a Combustion Unit According to Part (1)(c)3[a] of this Rule

Waste Code	Waste Description
D004	Toxicity Characteristic for Arsenic
D005	Toxicity Characteristic for Barium
D006	Toxicity Characteristic for Cadmium
D007	Toxicity Characteristic for Chromium
D008	Toxicity Characteristic for Lead
D009	Toxicity Characteristic for Mercury
D010	Toxicity Characteristic for Selenium
D011	Toxicity Characteristic for Silver
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-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
F007	Spent cyanide plating bath solutions from electroplating operations
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process
F010	Quenching bath residues from oil baths from metal treating operations where cyanides are used in the process
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations
F012	Quenching waste water treatment sludges from metal heat treating operations where cyanides are used in the process
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum car washing when such phosphating is an exclusive conversion coating process
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments
K003	Wastewater treatment sludge from the production of molybdate orange pigments
K004	Wastewater treatment sludge from the production of zinc yellow pigments
K005	Wastewater treatment sludge from the production of chrome green pigments

Waste Code	Waste Description
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated)
K007	Wastewater treatment sludge from the production of iron blue pigments.
K008	Oven residue from the production of chrome oxide green pigments
K061	Emission control dust/sludge from the primary production of steel in electric furnaces
K069	Emission control dust/sludge from secondary lead smelting
K071	Brine purification muds from the mercury cell processes in chlorine production, where separately prepurified brine is not used
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting
K106	Sludges from the mercury cell processes for making chlorine
P010	Arsenic acid H_3AsO_4
P011	Arsenic oxide As_2O_5
P012	Arsenic trioxide
P013	Barium cyanide
P015	Beryllium
P029	Copper cyanide Cu(CN)
P074	Nickel cyanide $Ni(CN)_2$
P087	Osmium tetroxide
P099	Potassium silver cyanide
P104	Silver cyanide
P113	Thallic oxide
P114	Thallium (I) selenite
P115	Thallium (I) sulfate
P119	Ammonium vanadate
P120	Vanadium oxide V_2O_5
P121	Zinc cyanide
U032	Calcium chromate
U145	Lead phosphate
U151	Mercury
U204	Selenious acid

Waste Code	Waste Description
U205	Selenium disulfide
U216	Thallium (I) chloride
U217	Thallium (I) nitrate

FOOTNOTE: [a] A combustion unit is defined as any thermal technology subject to Rule 1200-01-11-.05(15); .06(15); and/or .09(8).

Authority: T.C.A. §§4-5-202 and 68-212-101 et seq.

1200-01-11-.11 Standards For The Management Of Used Oil

(1) Definitions [40 CFR 279 Subpart A]

(a) Definitions [40 CFR 279.1]

Terms that are defined in Rules 1200-01-11-.01(2)(a), .02(1)(a), and 40 CFR 280.12 have the same meanings when used in this Rule.

"Aboveground tank" means a tank used to store or process used oil that is not an underground storage tank as defined in Rule 1200-1-15-.01.

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

"Do-it-yourselfer used oil collection center" means any site or facility that accepts/aggregates and stores used oil collected only from household do-it-yourselfers.

"Existing tank" means a tank that is used for the storage or processing of used oil and that is in operation or for which installation has commenced on or prior to July 7, 1995, the effective date of Tennessee' s authorized used oil program. 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 installation of the tank and if either

1. A continuous on-site 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 installation of the tank to be completed within a reasonable time.

"Household `do-it-yourselfer' used oil" means oil that is derived from households, such as used oil generated by individuals who generate used oil through the maintenance of their personal vehicles.

"Household `do-it-yourselfer' used oil generator" means an individual who generates household "do-it-yourselfer" used oil.

"New tank" means a tank that will be used to store or process used oil and for which installation has commenced after July 7, 1995, the effective date of Tennessee' s authorized used oil program.

" Petroleum refining facility" means an establishment primarily engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, and lubricants, through fractionation, straight distillation of crude oil, redistillation of unfinished petroleum derivatives, cracking or other processes (i.e., facilities classified as SIC 2911).

"Processing" means chemical or physical operations designed to produce from used oil, or to make used oil more amenable for production of, fuel oils, lubricants, or other used oil-derived product. Processing includes, but is not limited to: blending used oil with virgin petroleum products, blending used oils to meet the fuel specification, filtration, simple distillation, chemical or physical separation and re-refining.

"Re-refining distillation bottoms" means the heavy fraction produced by vacuum distillation of filtered and dehydrated used oil. The composition of still bottoms varies with column operation and feedstock.

"Tank" means any stationary device, designed to contain an accumulation of used oil which is constructed primarily of non-earthen materials, (e.g., wood, concrete, steel, plastic) which provides structural support.

"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.

"Used oil aggregation point" means any site or facility that accepts, aggregates, and/or stores used oil collected only from other used oil generation sites owned or operated by the owner or operator of the aggregation point, from which used oil is transported to the aggregation point in shipments of no more than 55 gallons. Used oil aggregation points may also accept used oil from household do-it-yourselfers.

"Used oil burner" means a facility where used oil not meeting the specification requirements in subparagraph (2)(b) of this Rule is burned for energy recovery in devices identified in part (7)(b)1 of this Rule.

"Used oil collection center" means any site or facility that is registered, licensed, permitted, or recognized by a state, county, or municipal government to manage used oil and accepts/aggregates and stores used oil collected from used oil generators regulated under paragraph (3) of this Rule who bring used oil to the collection center in shipments of no more than 55 gallons under the provisions of subparagraph (3)(d) of this Rule. Used oil collection centers may also accept used oil from household do-it-yourselfers.

"Used oil fuel marketer" means any person who conducts either of the following activities:

1. Directs a shipment of off-specification used oil from their facility to a used oil burner; or

2. First claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in subparagraph (2)(b) of this Rule.

"Used oil generator" means any person, by site, whose act or process produces used oil or whose act first causes used oil to become subject to regulation.

"Used oil processor/re-refiner" means a facility that processes used oil.

"Used oil transfer facility" means any transportation related facility including loading docks, parking areas, storage areas, and other areas where shipments of used oil are held for more than 24 hours and not longer than 35 days during the normal course of transportation or prior to an activity performed pursuant to subpart (3)(a)2(ii) of this Rule. Transfer facilities that store used oil for more than 35 days are subject to regulation under paragraph (6) of this Rule.

"Used oil transporter" means any person who transports used oil, any person who collects used oil from more than one generator and transports the collected oil, and owners and operators of used oil transfer facilities. Used oil transporters may consolidate or aggregate loads of used oil for purposes of transportation but, with the following exception, may not process used oil. Transporters may conduct incidental processing operations that occur in the normal course of used oil transportation (e.g., settling and water separation), but that are not designed to produce (or make more amenable for production of) used oil derived products or used oil fuel.

(2) Applicability [40 CFR 279 Subpart B]

(a) Applicability [40 CFR 279.10]

This subparagraph identifies those materials which are subject to regulation as used oil under this Rule. This subparagraph also identifies some materials that are not subject to regulation as used oil under this Rule, and indicates whether these materials may be subject to regulation as hazardous waste under Rules 1200-01-11-.01 through .07, .09 and .10.

1. Used Oil

The Commissioner presumes that used oil is to be recycled unless a used oil handler disposes of used oil, or sends used oil for disposal. Except as provided in subparagraph (2)(b) of this Rule, the regulations of this Rule apply to used oil, and to materials identified in this subparagraph as being subject to regulation as used oil, whether or not the used oil or material exhibits any characteristics of hazardous waste identified in Rule 1200-01-11-.02(3).

2. Mixtures of Used Oil and Hazardous Waste

(i) Listed Hazardous Waste.

(I) Mixtures of used oil and hazardous waste that is listed in Rule 1200-01-11-.02(4) are subject to regulation as hazardous waste under Rules 1200-01-11-.01 through .07, .09 and .10, rather than as used oil under this Rule.

(II) Rebuttable Presumption For Used Oil

Used oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in Rule 1200-01-11-.02(4). Persons may rebut this presumption by demonstrating that the used oil does not contain hazardous waste (for example, by showing that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in Rule 1200-01-11-.02(5)(a) Appendix VIII).

I. The rebuttable presumption does not apply to metalworking oils/fluids containing chlorinated paraffins, if they are processed, through a tolling arrangement as described in part (3)(e)3 of this Rule, 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.

(ii) Characteristic Hazardous Waste

Mixtures of used oil and hazardous waste that solely exhibit one or more of the hazardous waste characteristics identified in Rule 1200-01-11-

.02(3) and mixtures of used oil and hazardous waste that are listed in Rule 1200-01-11-.02(4) solely because they exhibit one or more of the characteristics of hazardous waste identified in Rule 1200-01-11-.02(3) are subject to:

(I) Except as provided in item (III) of this subpart, regulation as hazardous waste under Rules 1200-01-11-.01 through .07, .09 and .10 rather than as used oil under this Rule, if the resultant mixture exhibits any characteristics of hazardous waste identified in Rule 1200-01-11-.02(3), or

(II) Except as specified in item (III) of this subpart, regulation as used oil under this Rule, if the resultant mixture does not exhibit any characteristics of hazardous waste identified under Rule 1200-01-11-.02(3).

(III) Regulation as used oil under this Rule, if the mixture is of used oil and a waste which is hazardous solely because it exhibits the characteristic of ignitability (e.g., ignitable-only mineral spirits), provided that the resultant mixture does not exhibit the characteristic of ignitability under Rule 1200-01-11-.02(3)(b).

(Note to Rule 1200-01-11-.11(2)(a)2(ii): The EPA regulatory requirements set forth in 40 CFR 279.10(b)(2) for mixtures of used oil and hazardous waste that solely exhibits one or more of the hazardous waste characteristics identified in subpart C of 40 CFR Part 261, and mixtures of used oil and hazardous waste that are listed in subpart D of 40 CFR Part 261 solely because it exhibits one or more of the characteristics of hazardous waste identified in subpart C, are administratively stayed as of December 29, 1995. The effect of the stay is to reinstate for such mixtures the regulatory requirements otherwise applicable to hazardous waste mixtures, including but not limited to those set forth in 40 CFR Parts 260-266, 268, 270, and 271, until the Agency completes a new rulemaking addressing that provision.)

(Ed. Note: The above EPA stay was vacated by the U.S. Court of Appeals for the D.C. Circuit on January 19, 1996 (Safety-Kleen Corp. v. EPA, Docket Number: 92-1629); therefore, §279.10(b)(2), as written, remains in force.)

(iii) Conditionally Exempt Small Quantity Generator Hazardous Waste

Mixtures of used oil and conditionally exempt small quantity generator hazardous waste regulated under Rule 1200-01-11-.02(1)(e) are subject to regulation as used oil under this Rule.

3. Materials Containing or Otherwise Contaminated With Used Oil

(i) Except as provided in subpart (2)(a)3(ii) of this Rule, materials containing or otherwise contaminated with used oil from which the used oil has been properly drained or removed to the extent possible such that no visible signs of free-flowing oil remain in or on the material:

(I) Are not used oil and thus not subject to this Rule, and

(II) If applicable, are subject to the hazardous waste regulations of Rules 1200-01-11-.01 through .07, .09 and .10.

(ii) Materials containing or otherwise contaminated with used oil that are burned for energy recovery are subject to regulation as used oil under this Rule.

(iii) Used oil drained or removed from materials containing or otherwise contaminated with used oil is subject to regulation as used oil under this Rule.

4. Mixtures of Used Oil With Products

(i) Except as provided in subpart (2)(a)4(ii) of this Rule, mixtures of used oil and fuels or other fuel products are subject to regulation as used oil under this Rule.

(ii) Mixtures of used oil and diesel fuel mixed on-site by the generator of the used oil for use in the generator's own vehicles are not subject to this Rule once the used oil and diesel fuel have been mixed. Prior to mixing, the used oil is subject to the requirements of paragraph (3) of this Rule.

5. Materials Derived From Used Oil

(i) Materials that are reclaimed from used oil that are used beneficially and are not burned for energy recovery or used in a manner constituting disposal (e.g., re-refined lubricants) are:

(I) Not used oil and thus are not subject to this Rule and

(II) Not solid wastes and are thus not subject to the hazardous waste regulations of Rules 1200-01-11-.01 through .07, .09 and .10 as provided in Rule 1200-01-11-.02(1)(c)3(ii)(I).

(ii) Materials produced from used oil that are burned for energy recovery (e.g., used oil fuels) are subject to regulation as used oil under this Rule.

(iii) Except as provided in subpart (2)(a)5(iv) of this Rule, materials derived from used oil that are disposed of or used in a manner constituting disposal are:

(I) Not used oil and thus are not subject to this Rule and

(II) Solid wastes and thus are subject to the hazardous waste regulations of Rules 1200-01-11-.01 through .07, .09 and .10, if the materials are listed or identified as hazardous waste.

(iv) Used oil re-refining distillation bottoms that are used as feedstock to manufacture asphalt products are not subject to this Rule.

6. Wastewater

Wastewater, the discharge of which is subject to regulation under either the Tennessee Water Quality Control Act of 1977 or section 402 or section 307(b) of the Clean Water Act (including wastewaters at facilities which have eliminated the discharge of wastewater), contaminated with de minimis quantities of used oil are not subject to the requirements of this Rule. For purposes of this part, "de minimis" quantities of used oils are defined as small spills, leaks, or drippings from pumps, machinery, pipes, and other similar equipment during normal operations or small amounts of oil lost to the wastewater treatment system during washing or draining operations. This exception will not apply if the used oil is discarded as a result of abnormal manufacturing operations resulting in

substantial leaks, spills, or other releases, or to used oil recovered from wastewaters.

7. Used Oil Introduced Into Crude Oil Pipelines or a Petroleum Refining Facility

(i) Used oil mixed with crude oil or natural gas liquids (e.g., in a production separator or crude oil stock tank) for insertion into a crude oil pipeline is exempt from the requirements of this Rule. The used oil is subject to the requirements of this Rule prior to the mixing of used oil with crude oil or natural gas liquids.

(ii) Mixtures of used oil and crude oil or natural gas liquids containing less than 1% used oil that are being stored or transported to a crude oil pipeline or petroleum refining facility for insertion into the refining process at a point prior to crude distillation or catalytic cracking are exempt from the requirements of this Rule.

(iii) Used oil that is inserted into the petroleum refining facility process before crude distillation or catalytic cracking without prior mixing with crude oil is exempt from the requirements of this Rule provided that the used oil constitutes less than 1% of the crude oil feed to any petroleum refining facility process unit at any given time. Prior to insertion into the petroleum refining facility process, the used oil is subject to the requirements of this Rule.

(iv) Except as provided in subpart (2)(a)7(v) of this Rule, used oil that is introduced into a petroleum refining facility process after crude distillation or catalytic cracking is exempt from the requirements of this Rule only if the used oil meets the specification of subparagraph (2)(b) of this Rule. Prior to insertion into the petroleum refining facility process, the used oil is subject to the requirements of this Rule.

(v) Used oil that is incidentally captured by a hydrocarbon recovery system or wastewater treatment system as part of routine process operations at a petroleum refining facility and inserted into the petroleum refining facility process is exempt from the requirements of this Rule. This exemption does not extend to used oil which is intentionally introduced into a hydrocarbon recovery system (e.g., by pouring collected used oil into the waste water treatment system).

(vi) Tank bottoms from stock tanks containing exempt mixtures of used oil and crude oil or natural gas liquids are exempt from the requirements of this Rule.

8. Used Oil on Vessels

Used oil produced on vessels from normal shipboard operations is not subject to this Rule until it is transported ashore.

9. Used Oil Containing PCBs

Used oil containing PCBs (as defined at 40 CFR 761.3) at any concentration less than 50 ppm is subject to the requirements of this Rule unless, because of dilution, it is regulated under 40 CFR Part 761 as a used oil containing PCBs at 50 ppm or greater. PCB-containing used oil subject to the requirements of this Rule may also be subject to the prohibitions and requirements found at 40 CFR

Part 761, including §761.20(d) and (e). Used oil containing PCBs at concentrations of 50 ppm or greater is not subject to the requirements of this Rule, but is subject to regulation under 40 CFR Part 761. No person may avoid these provisions by diluting used oil containing PCBs, unless otherwise specifically provided for in this Rule or Part 761.

(b) Used Oil Specifications [40 CFR 279.11]

Used oil burned for energy recovery, and any fuel produced from used oil by processing, blending, or other treatment, is subject to regulation under this Rule unless it is shown not to exceed any of the allowable levels of the constituents and properties shown in Table 1. Once used oil that is to be burned for energy recovery has been shown not to exceed any allowable level and the person making that showing complies with subparagraphs (8)(c) and (8)(d) and part (8)(e)2 of this Rule, the used oil is no longer subject to this Rule.

Table 1-Used Oil Not Exceeding Any Allowable Level Shown Below Is Not Subject to This Rule When Burned for Energy Recovery[1]

Constituent/property	Allowable level
Arsenic	5 ppm maximum.
Cadmium	2 ppm maximum.
Chromium	10 ppm maximum.
Lead	100 ppm maximum.
Flash point	100 °F minimum.
Total halogens	4,000 ppm maximum.[2]

FOOTNOTE: [1]The allowable levels do not apply to mixtures of used oil and hazardous waste that continue to be regulated as hazardous waste (see part (2)(a)2 of this Rule).

FOOTNOTE: [2]Used oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste under the rebuttable presumption provided under subpart (2)(a)2(i) of this Rule. Such used oil is subject to Rule 1200-01-11-.09(8) rather than this Rule when burned for energy recovery unless the presumption of mixing can be successfully rebutted.

(c) Prohibitions [40 CFR 279.12]

1. Surface Impoundment Prohibition

Used oil shall not be managed in surface impoundments or waste piles unless the units are subject to regulation under Rules 1200-01-11-.05 or .06 .

2. Use as a Dust Suppressant

The use of used oil as a dust suppressant is prohibited in Tennessee, as set forth in subparagraph (9)(c) of this Rule.

3. Burning in Particular Units

Off-specification used oil fuel may be burned for energy recovery in only the following devices:

(i) Industrial furnaces identified in Rule 1200-01-11-.01(2)(a);

(ii) Boilers, as defined in Rule 1200-01-11-.01(2)(a), that are identified 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;

(II) Utility boilers used to produce electric power, steam, heated or cooled air, or other gases or fluids for sale; or

(III) Used oil-fired space heaters provided that the burner meets the provisions of subparagraph (3)(d) of this Rule.

(iii) Hazardous waste incinerators subject to regulation under Rules 1200-01-11-.05(15) or .06(15).

(d) Changes In Notification Data

The used oil marketers, processors/re-refiners and/or haulers/transporters shall notify the Department in writing within 30 days after changes in operational status (e.g., becoming inactive, or changes affecting certification, etc.).

(3) Standards for Used Oil Generators [40 CFR 279 Subpart C]

(a) Applicability [40 CFR 279.20]

1. General

Except as provided in subparts (3)(a)1(i)-(iv) of this Rule, this paragraph applies to all used oil generators. A used oil generator is any person, by site, whose act or process produces used oil or whose act first causes used oil to become subject to regulation.

(i) Household "do-it-yourselfer" Used Oil Generators

Household "do-it-yourselfer" used oil generators are not subject to regulation under this Rule.

(ii) Vessels

Vessels at sea or at port are not subject to this paragraph. For purposes of this paragraph, used oil produced on vessels from normal shipboard operations is considered to be generated at the time it is transported ashore. The owner or operator of the vessel and the person(s) removing or accepting used oil from the vessel are co-generators of the used oil and are both responsible for managing the waste in compliance with this paragraph once the used oil is transported ashore. The co-generators may decide among them which party will fulfill the requirements of this paragraph.

(iii) Diesel Fuel

Mixtures of used oil and diesel fuel mixed by the generator of the used oil for use in the generator's own vehicles are not subject to this Rule once

the used oil and diesel fuel have been mixed. Prior to mixing, the used oil fuel is subject to the requirements of this paragraph.

(iv) Farmers

Farmers who generate an average of 25 gallons per month or less of used oil from vehicles or machinery used on the farm in a calendar year are not subject to the requirements of this Rule.

(Comment: Farmers meeting this exemption are presumed to be do-it-yourselfers.)

2. Other Applicable Provisions

Used oil generators who conduct the following activities are subject to the requirements of other applicable provisions of this Rule as indicated in subparts (3)(a)2(i)-(v) of this Rule:

(i) Generators who transport used oil, except under the self-transport provisions of parts (3)(e)1 and 2 of this Rule, must also comply with paragraph (5) of this Rule.

(ii) Generators who process or re-refine used oil must also comply with paragraph (6) of this Rule.

(I) Except as provided in item 2(ii)(II) of this subparagraph, generators who process or re-refine used oil must also comply with paragraph (6) of this Rule.

(II) Generators who perform the following activities are not processors provided that the used oil is generated on-site and is not being sent off-site to a burner of on- or off-specification used oil fuel:

I. Filtering, cleaning, or otherwise reconditioning used oil before returning it for reuse by the generator;

II. Separating used oil from wastewater generated on-site to make the wastewater acceptable for discharge or reuse pursuant to the Tennessee Water Quality Control Act of 1977 or section 402 or section 307(b) of the Clean Water Act or other applicable Federal or state regulations governing the management or discharge of wastewaters;

III. Using oil mist collectors to remove small droplets of used oil from in-plant air to make plant air suitable for continued recirculation;

IV. Draining or otherwise removing used oil from materials containing or otherwise contaminated with used oil in order to remove excessive oil to the extent possible pursuant to part (2)(a)3 of this Rule;

V. Filtering, separating, or otherwise reconditioning used oil before burning it in a space heater pursuant to subparagraph (3)(d) of this Rule.

(iii) Generators who burn off-specification used oil for energy recovery, except under the on-site space heater provisions of subparagraph (3)(d) of this Rule, must also comply with paragraph (7) of this Rule.

(iv) Generators who direct shipments of off-specification used oil from their facility to a used oil burner or first claim that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in subparagraph (2)(b) of this Rule must also comply with paragraph (8) of this Rule.

(v) Generators who dispose of used oil, including the use of used oil as a dust suppressant, must also comply with paragraph (9) of this Rule.

(b) Hazardous Waste Mixing [40 CFR 279.21]

1. Mixtures of used oil and hazardous waste must be managed in accordance with Rule 1200-01-11-.11(2)(a)2.

2. The rebuttable presumption for used oil of item (2)(a)2(i)(II) of this Rule applies to used oil managed by generators. Under the rebuttable presumption for used oil of item (2)(a)2(i)(II) of this Rule, used oil containing greater than 1,000 ppm total halogens is presumed to be a hazardous waste and thus must be managed as hazardous waste and not as used oil unless the presumption is rebutted. However, the rebuttable presumption does not apply to certain metalworking oils/fluids and certain used oils removed from refrigeration units.

(c) Used Oil Storage [40 CFR 279.22]

Used oil generators are subject to all applicable Spill Prevention, Control and Countermeasures [40 CFR part 112] in addition to the requirements of this paragraph. Used oil generators are also subject to the Underground Storage Tank standards (Rules 1200-1-15-.01 through .11) for used oil stored in underground tanks whether or not the used oil exhibits any characteristics of hazardous waste, in addition to the requirements of this paragraph.

1. Storage Units

Used oil generators shall not store used oil in units other than tanks, containers, or units subject to regulation under Rules 1200-01-11-.05 or .06.

2. Condition of Units

Containers and aboveground tanks used to store used oil at generator facilities must be:

(i) In good condition (no severe rusting, apparent structural defects or deterioration); and

(ii) Not leaking (no visible leaks).

3. Labels

(i) Containers and aboveground tanks used to store used oil at generator facilities must be labeled or marked clearly with the words "Used Oil."

(ii) Fill pipes used to transfer used oil into underground storage tanks at generator facilities must be labeled or marked clearly with the words "Used Oil."

4. Response to Releases

Upon detection of a release of used oil to the environment that is not subject to the requirements of the Underground Storage Tank standards (Rules 1200-1-15-.01 through .11), and which occurred after July 1, 1993, the effective date of the used oil regulations in Tennessee, a generator must perform the following cleanup steps:

(i) Stop the release;

(ii) Contain the released used oil;

(iii) Clean up and manage properly the released used oil and other materials; and

(iv) If necessary, repair or replace any leaking used oil storage containers or tanks prior to returning them to service.

(d) On-site Burning in Space Heaters [40 CFR 279.23]

Generators may burn used oil in used oil-fired space heaters provided that:

1. The heater burns only used oil that the owner or operator generates or used oil received from household do-it-yourself used oil generators;

2. The heater is designed to have a maximum capacity of not more than 0.5 million Btu per hour; and

3. The combustion gases from the heater are vented to the ambient air.

(e) Off-site Shipments [40 CFR 279.24]

Except as provided in parts (3)(e)1 through 3 of this Rule, generators must ensure that their used oil is transported only by transporters who have obtained Installation Identification Numbers.

1. Self-transportation of Small Amounts to Approved Collection Centers

Generators may transport, without an Installation Identification Number, used oil that is generated at the generator's site and used oil collected from household do-it-yourselfers to a used oil collection center provided that:

(i) The generator transports the used oil in a vehicle owned by the generator or owned by an employee of the generator;

(ii) The generator transports no more than 55 gallons of used oil at any time; and

(iii) The generator transports the used oil to a used oil collection center that is registered, licensed, permitted, or recognized by a state/county/municipal government to manage used oil.

2. Self-transportation of Small Amounts to Aggregation Points Owned by the Generator

Generators may transport, without an Installation Identification Number, used oil that is generated at the generator's site to an aggregation point provided that:

(i) The generator transports the used oil in a vehicle owned by the generator or owned by an employee of the generator;

(ii) The generator transports no more than 55 gallons of used oil at any time; and

(iii) The generator transports the used oil to an aggregation point that is owned and/or operated by the same generator.

3. Tolling Arrangements

Used oil generators may arrange for used oil to be transported by a transporter without an Installation Identification Number if the used oil is reclaimed under a contractual agreement pursuant to which reclaimed oil is returned by the processor/re-refiner to the generator for use as a lubricant, cutting oil, or coolant. The contract (known as a "tolling arrangement") must indicate:

(i) The type of used oil and the frequency of shipments;

(ii) That the vehicle used to transport the used oil to the processing/re-refining facility and to deliver recycled used oil back to the generator is owned and operated by the used oil processor/re-refiner; and

(iii) That reclaimed oil will be returned to the generator.

(4) Standards for Used Oil Collection Centers and Aggregation Points [40 CFR 279 Subpart D]

(a) Do-it-Yourselfer Used Oil Collection Centers [40 CFR 279.30]

1. Applicability

This section applies to owners or operators of all do-it-yourselfer (DIY) used oil collection centers. A DIY used oil collection center is any site or facility that accepts/aggregates and stores used oil collected only from household do-it-yourselfers.

2. DIY Used Oil Collection Center Requirements

Owners or operators of all DIY used oil collection centers must comply with the generator standards in paragraph (3) of this Rule.

(b) Used Oil Collection Centers [40 CFR 279.31]

1. Applicability

This subparagraph applies to owners or operators of used oil collection centers. A used oil collection center is any site or facility that accepts/aggregates and stores used oil collected from used oil generators regulated under paragraph (3) of this Rule who bring used oil to the collection center in shipments of no more

than 55 gallons under the provisions of part (3)(e)1 of this Rule. Used oil collection centers may also accept used oil from household do-it-yourselfers.

2. Used Oil Collection Center Requirements

Owners or operators of all used oil collection centers must:

(i) Comply with the generator standards in paragraph (3) of this Rule; and

(ii) Be registered/licensed/permitted/recognized by a state/county/municipal government to manage used oil.

(c) Used Oil Aggregation Points Owned by the Generator [40 CFR 279.32]

1. Applicability

This subparagraph applies to owners or operators of all used oil aggregation points. A used oil aggregation point is any site or facility that accepts, aggregates, and/or stores used oil collected only from other used oil generation sites owned or operated by the owner or operator of the aggregation point, from which used oil is transported to the aggregation point in shipments of no more than 55 gallons under the provisions of part (3)(e)2 of this Rule. Used oil aggregation points may also accept used oil from household do-it-yourselfers.

2. Used Oil Aggregation Point Requirements

Owners or operators of all used oil aggregation points must comply with the generator standards in paragraph (3) of this Rule.

(5) Standards for Used Oil Transporter and Transfer Facilities

(a) Applicability [40 CFR 279.40]

1. General

Except as provided in subparts (5)(a)1(i)-(iv) of this Rule, this paragraph applies to all used oil transporters. Used oil transporters are persons who transport used oil, persons who collect used oil from more than one generator and transport the collected oil, and owners and operators of used oil transfer facilities.

(i) This paragraph does not apply to on-site transportation.

(ii) This paragraph does not apply to generators who transport shipments of used oil totaling 55 gallons or less from the generator to a used oil collection center as specified in part (3)(e)1 of this Rule, except as provided for in subpart (v) of this part.

(iii) This paragraph does not apply to generators who transport shipments of used oil totaling 55 gallons or less from the generator to a used oil aggregation point owned or operated by the same generator as specified in part (3)(e)2 of this Rule, except as provided for in subpart (v) of this part.

(iv) This paragraph does not apply to transportation of used oil from household do-it-yourselfers to a regulated used oil generator, collection center, aggregation point, processor/re-refiner, or burner subject to the

requirements of this part. Except as provided in subparts (5)(a)1(i)-(iii) of this Rule, this paragraph does, however, apply to transportation of collected household do-it-yourselfer used oil from regulated used oil generators, collection centers, aggregation points, or other facilities where household do-it-yourselfer used oil is collected.

(v) Any transporter of used oil who transports: a) quantities of used oil in excess of 55 gallons of used oil at any given time, or b) who transports more than 1,000 gallons of used oil in a calendar year, must meet the certification requirements of this subparagraph in order to transport used oil in the state of Tennessee. Certification of compliance with the following items must be demonstrated prior to commencement of used oil transportation activities by the transporter, as well as annually, as part of the used oil transporter's annual report.

(I) Each used oil hauler must demonstrate that each employee engaged in the hauling of used oil is in the possession of a current Commercial Driver's License. This must be accompanied by a signed certification by the employee stating that the employee has examined and is familiar with the Used Oil Management Standards for Transporters in Tennessee Rule 1200-01-11-.11.

(II) All vehicles used to transport used oil shall have Periodic Inspections as described by Tennessee Code Annotated §65-15-113 and Rule 1220-2-1-.20. The requirements of a Periodic Inspection are found in federal regulations at 49 CFR Parts 396.17 through 396.25, and Appendix G of 49 CFR Part 396. A copy of the Periodic Inspection report for each vehicle engaged in the transport of used oil shall be included in the initial Certification and updated in subsequent annual reports. Each vehicle shall be in good mechanical condition and suitable for the transportation of used oil.

(III) All commercial transporters engaged in the transportation of used oils must maintain a minimum of $1,000,000 in liability insurance.

(IV) The transporter shall briefly describe the recordkeeping practices to demonstrate compliance with subparagraph (5)(g) of this Rule. Copies (examples only) of shipping papers shall be included.

(V) I. The transporter shall certify that all used oil is delivered to qualified customers or certified recyclers.

II. A. The terms "qualified customers" and "certified recyclers" shall mean transporters, transfer facilities, off-specification burners, reprocessors, marketers, and/or re-refiners of used oil, which are in possession of valid Installation Identification Numbers.

B. "Qualified customers" shall also include customers without Installation Identification Numbers which receive and burn only those

used oils which qualify as "on-specification" used oils as defined in subparagraph (2)(b) of this Rule. In such cases when the qualified customer receives a shipment of on-specification used oil and does not possess an Installation Identification Number, the transporter shall clearly indicate in the record that the shipment was "on-specification" used oil.

III. A. Supporting documentation of compliance with subitems 1(v)(V)I and II of this paragraph shall include all information as required at part (g)2 of this paragraph.

B. This documentation shall be constructed and maintained in accordance with the recordkeeping requirements of subparagraph (5)(g) of this Rule, and shall be available for inspection and furnished to the Department upon request.

(vi) (I) Certifications required by this paragraph, except for " drivers" identified in item (v)(I) of this part, shall contain the following wording:

" I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that knowingly giving or causing to be given any false information constitutes a Class C misdemeanor."

(II) The Certification for " drivers" referred to in item (v)(I) of this part shall contain the following wording:

" I certify that I have read and am familiar with the Used Oil Management Standards for Transporters in Rule 1200-01-11-.11. I am aware that knowingly giving or causing to be given any false information constitutes a Class C misdemeanor."

2. Imports and Exports

Transporters who import used oil from abroad or export used oil outside of the United States are subject to the requirements of this paragraph from the time the used oil enters and until the time it exits the United States.

3. Trucks Used to Transport Hazardous Waste

Unless trucks previously used to transport hazardous waste are emptied as described in Rule 1200-01-11-.02(1)(g) prior to transporting used oil, the used oil is considered to have been mixed with the hazardous waste and must be managed as hazardous waste unless, under the provisions of part (2)(a)2 of this Rule, the hazardous waste/used oil mixture is determined not to be hazardous waste.

4. Other Applicable Provisions

Used oil transporters who conduct the following activities are also subject to other applicable provisions of this Rule as indicated in subparts (5)(a)4(i)-(v) of this Rule:

(i) Transporters who generate used oil must also comply with paragraph (3) of this Rule;

(ii) Transporters who process or re-refine used oil, except as provided in subparagraph (5)(b) of this Rule, must also comply with paragraph (6) of this Rule;

(iii) Transporters who burn off-specification used oil for energy recovery must also comply with paragraph(7) of this Rule;

(iv) Transporters who direct shipments of off-specification used oil from their facility to a used oil burner or first claim that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in subparagraph (2)(b) of this Rule must also comply with paragraph (8) of this Rule; and

(v) Transporters who dispose of used oil, including the use of used oil as a dust suppressant, must also comply with paragraph (9) of this Rule.

(b) Restrictions on Transporters Who Are Not Also Processors or Re-refiners [40 CFR 279.41]

1. Used oil transporters may consolidate or aggregate loads of used oil for purposes of transportation. However, except as provided in part (5)(b)2 of this Rule, used oil transporters may not process used oil unless they also comply with the requirements for processors/re-refiners in paragraph (6) of this Rule.

2. Transporters may conduct incidental processing operations that occur in the normal course of used oil transportation (e.g., settling and water separation), but that are not designed to produce (or make more amenable for production of) used oil derived products unless they also comply with the processor/re-refiner requirements in paragraph (6) of this Rule.

3. Transporters of used oil that is removed from oil bearing electrical transformers and turbines and filtered by the transporter or at a transfer facility prior to being returned to its original use are not subject to the processor/re-refiner requirements in paragraph (6) of this Rule.

(c) Notification [40 CFR 279.42]

1. Identification Numbers

Used oil transporters who have not previously complied with the notification requirements of Rule 1200-01-11-.03(2) must comply with these requirements and obtain an Installation Identification Number.

2. Mechanics of Notification

A used oil transporter who has not received an Installation Identification Number may obtain one by notifying the Commissioner of their used oil activity by submitting either:

(i) A completed Solid Waste Management Notification, and Solid Waste Management Notification Schedule B and Hazardous Waste Notification forms; or

(Note: To obtain the forms call Tennessee Department of Environment and Conservation, Division of Solid Waste Management (800) 237-7018.)

(ii) A letter requesting an Installation Identification Number.

Call the Tennessee Department of Environment and Conservation, Division of Solid Waste Management, Used Oil Management Program at (800) 237-7018 to determine where to send a letter requesting an Installation Identification Number. The letter should include the following information:

(I) Transporter company name;

(II) Owner of the transporter company;

(III) Mailing address for the transporter;

(IV) Name and telephone number for the transporter point of contact;

(V) Type of transport activity (i.e., transport only, transport and transfer facility, transfer facility only);

(VI) Location of all transfer facilities at which used oil is stored;

(VII) Name and telephone number for a contact at each transfer facility.

(d) Used Oil Transportation [40 CFR 279.43]

1. Deliveries

A used oil transporter must deliver all used oil received to:

(i) Another used oil transporter, provided that the transporter has obtained an Installation Identification Number;

(ii) A used oil processing/re-refining facility who has obtained an Installation Identification Number;

(iii) An off-specification used oil burner facility who has obtained an Installation Identification Number; or

(iv) An on-specification used oil burner facility.

2. DOT Requirements

Used oil transporters must comply with all applicable requirements under the U.S. Department of Transportation regulations in 49 CFR parts 171 through 180. Persons transporting used oil that meets the definition of a hazardous material in 49 CFR 171.8 must comply with all applicable regulations in 49 CFR parts 171 through 180.

3. Used Oil Discharges.

(i) In the event of a discharge of used oil during transportation, the transporter must take appropriate immediate action to protect human health and the environment (e.g., notify local authorities, dike the discharge area).

(ii) If a discharge of used oil occurs during transportation and an official (State or local government or a Federal Agency) acting within the scope of official responsibilities determines that immediate removal of the used oil is necessary to protect human health or the environment, that official may authorize the removal of the used oil by transporters who do not have Installation Identification Numbers.

(iii) An air, rail, highway, or water transporter who has discharged used oil must:

(I) Give notice, if required by 49 CFR 171.15, to the National Response Center (800-424-8802 or 202-426-2675); and

(II) 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.

(iv) A water transporter who has discharged used oil must give notice as required by 33 CFR 153.203.

(v) A transporter must clean up any used oil discharge that occurs during transportation or take such action as may be required or approved by federal, state, or local officials so that the used oil discharge no longer presents a hazard to human health or the environment.

(e) Rebuttable Presumption For Used Oil [40 CFR 279.44]

1. To ensure that used oil is not a hazardous waste under the rebuttable presumption of item (2)(a)2(i)(II) of this Rule, the used oil transporter must determine whether the total halogen content of used oil being transported or stored at a transfer facility is above or below 1,000 ppm.

2. The transporter must make this determination by:

(i) Testing the used oil; or

(ii) Applying knowledge of the halogen content of the used oil in light of the materials or processes used.

3. If the used oil contains greater than or equal to 1,000 ppm total halogens, it is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in Rule 1200-01-11-.02(4). The owner or operator may rebut the presumption by demonstrating that the used oil does not contain hazardous waste (for example, showing that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in Rule 1200-01-11-.02(5) Appendix VIII).

(i) The rebuttable presumption does not apply to metalworking oils/fluids containing chlorinated paraffins, if they are processed, through a tolling arrangement as described in part (3)(e)3 of this Rule, 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 if 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.

4. Record Retention

Records of analyses conducted or information used to comply with parts 1, 2 and 3 of this subparagraph must be maintained by the transporter for at least 3 years.

(f) Used Oil Storage at Transfer Facilities [40 CFR 279.45]

Used oil transporters are subject to all applicable Spill Prevention, Control and Countermeasures (40 CFR part 112) in addition to the requirements of this paragraph. Used oil transporters are also subject to the Underground Storage Tank standards (Rules 1200-1-15-.01 through .11) for used oil stored in underground tanks whether or not the used oil exhibits any characteristics of hazardous waste, in addition to the requirements of this paragraph.

1. Applicability

This subparagraph applies to used oil transfer facilities. Used oil transfer facilities are transportation related facilities including loading docks, parking areas, storage areas, and other areas where shipments of used oil are held for more than 24 hours during the normal course of transportation and not longer than 35 days. Transfer facilities that store used oil for more than 35 days are subject to regulation under paragraph (6) of this Rule.

2. Storage Units

Owners or operators of used oil transfer facilities may not store used oil in units other than tanks, containers, or units subject to regulation under Rules 1200-01-11-.05 or .06.

3. Condition of Units

Containers and aboveground tanks used to store used oil at transfer facilities must be:

(i) In good condition (no severe rusting, apparent structural defects or deterioration); and

(ii) Not leaking (no visible leaks).

4. Secondary Containment For Containers

Containers used to store used oil at transfer facilities must be equipped with a secondary containment system.

(i) The secondary containment system must consist of, at a minimum:

(I) Dikes, berms or retaining walls; and

(II) A floor. The floor must cover the entire area within the dikes, berms, or retaining walls; or

(III) An equivalent secondary containment system.

(ii) The entire containment system, including walls and floors, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater, or surface water.

5. Secondary Containment For Existing Aboveground Tanks

Existing aboveground tanks used to store used oil at transfer facilities must be equipped with a secondary containment system.

(i) The secondary containment system must consist of, at a minimum:

(I) Dikes, berms or retaining walls; and

(II) A floor. The floor must cover the entire area within the dike, berm, or retaining wall except areas where existing portions of the tank meet the ground; or

(III) An equivalent secondary containment system.

(ii) The entire containment system, including walls and floors, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater, or surface water.

6. Secondary Containment For New Aboveground Tanks

New aboveground tanks used to store used oil at transfer facilities must be equipped with a secondary containment system.

(i) The secondary containment system must consist of, at a minimum:

(I) Dikes, berms or retaining walls; and

(II) A floor. The floor must cover the entire area within the dike, berm, or retaining wall; or

(III) An equivalent secondary containment system.

(ii) The entire containment system, including walls and floors, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater, or surface water.

7. Labels

(i) Containers and aboveground tanks used to store used oil at transfer facilities must be labeled or marked clearly with the words "Used Oil."

(ii) Fill pipes used to transfer used oil into underground storage tanks at transfer facilities must be labeled or marked clearly with the words "Used Oil." Where fill pipes are visually separated from the tanks (e.g., by a wall or other obstruction), the fill pipes must be labeled on both sides of the obstruction.

8. Response to Releases

Upon detection of a release of used oil to the environment that is not subject to the requirements of the Underground Storage Tank standards (Rules 1200-1-15-.01 through .11), and which occurred after July 1, 1993, the effective date of the used oil regulations in Tennessee, the owner/operator of a transfer facility must perform the following cleanup steps:

(i) Stop the release;

(ii) Contain the released used oil;

(iii) Clean up and manage properly the released used oil and other materials; and

(iv) If necessary, repair or replace any leaking used oil storage containers or tanks prior to returning them to service.

(g) Tracking [40 CFR 279.46]

1. Acceptance

Used oil transporters must keep a record of each used oil shipment accepted for transport. Records for each shipment must include:

(i) The name and address of the generator, transporter, or processor/re-refiner who provided the used oil for transport;

(ii) The Installation Identification Number (if applicable) of the generator, transporter, or processor/re-refiner who provided the used oil for transport;

(iii) The quantity of used oil accepted;

(iv) The date of acceptance; and

(v) The signature, dated upon receipt of the used oil, of a representative of the generator, transporter, or processor/re-refiner who provided the used oil for transport.

(I) Except as provided in item (5)(g)1(v)(II) of this Rule, the signature, dated upon receipt of the used oil, of a representative of the generator, transporter, or processor/re-refiner who provided the used oil for transport.

(II) Intermediate rail transporters are not required to sign the record of acceptance.

2. Deliveries

Used oil transporters must keep a record of each shipment of used oil that is delivered to another used oil transporter, or to a used oil burner, processor/re-refiner, or disposal facility. Records of each delivery must include:

(i) The name and address of the receiving facility or transporter;

(ii) The Installation Identification Number of the receiving facility or transporter;

(iii) The quantity of used oil delivered;

(iv) The date of delivery;

(v) The signature, dated upon receipt of the used oil, of a representative of the receiving facility or transporter.

(I) Except as provided in item (5)(g)2(v)(II) of this Rule, the signature, dated upon receipt of the used oil, of a representative of the receiving facility or transporter.

(II) Intermediate rail transporters are not required to sign the record of delivery.

3. Exports of Used Oil

Used oil transporters must maintain the records described in subparts (5)(g)2(i)-(iv) of this Rule for each shipment of used oil exported to any foreign country.

4. Record Retention

The records described in parts (5)(g)1,2, and 3 of this Rule must be maintained for at least three years.

(h) Management of Residues [40 CFR 279.47]

Transporters who generate residues from the storage or transport of used oil must manage the residues as specified in part (2)(a)5 of this Rule.

(6) Standards for Used Oil Processors and Re-Refiners [40 CFR 279 Subpart F]

(a) Applicability [40 CFR 279.50]

1. The requirements of this paragraph apply to owners and operators of facilities that process used oil. Processing means chemical or physical operations designed to produce from used oil, or to make used oil more amenable for production of, fuel oils, lubricants, or other used oil-derived products. Processing includes, but is not limited to: blending used oil with virgin petroleum products, blending used oils to meet the fuel specification, filtration, simple distillation, chemical or physical separation and re-refining. The requirements of this paragraph do not apply to:

   (i) Transporters that conduct incidental processing operations that occur during the normal course of transportation as provided in subparagraph (5)(b) of this Rule; or

   (ii) Burners that conduct incidental processing operations that occur during the normal course of used oil management prior to burning as provided in part (7)(b)2 of this Rule.

2. Other Applicable Provisions

   Used oil processors/re-refiners who conduct the following activities are also subject to the requirements of other applicable provisions of this Rule as indicated in subparts (6)(a)2(i)-(v) of this Rule.

   (i) Processors/re-refiners who generate used oil must also comply with paragraph (3) of this Rule;

   (ii) Processors/re-refiners who transport used oil must also comply with paragraph (5) of this Rule;

   (iii) Except as provided in items (6)(a)2(iii)(I) and (II) of this Rule, processors/re-refiners who burn off-specification used oil for energy recovery must also comply with paragraph (7) of this Rule. Processor/re-refiners burning used oil for energy recovery under the following conditions are not subject to paragraph (7) of this Rule:

      (I) The used oil is burned in an on-site space heater that meets the requirements of subparagraph (3)(d) of this Rule; or

      (II) The used oil is burned for purposes of processing used oil, which is considered burning incidentally to used oil processing;

   (iv) Processors/re-refiners who direct shipments of off-specification used oil from their facility to a used oil burner or first claim that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in subparagraph (2)(b) of this Rule must also comply with paragraph (8) of this Rule; and

   (v) Processors/re-refiners who dispose of used oil, including the use of used oil as a dust suppressant, also must comply with paragraph (9) of this Rule.

(b) Notification [40 CFR 279.51]

1. Identification Numbers

Used oil processors and re-refiners who have not previously complied with the notification requirements of Rule 1200-01-11-.03(2) must comply with these requirements and obtain an Installation Identification Number.

2. Mechanics of Notification

A used oil processor or re-refiner who has not received an Installation Identification Number may obtain one by notifying the Commissioner of their used oil activity by submitting either:

(i) A completed Solid Waste Management Notification and Hazardous Waste Notification Forms; or

(Note: To obtain the forms call Tennessee Department of Environment and Conservation, Division of Solid Waste Management (800) 237-7018.)

(ii) A letter requesting an Installation Identification Number.

Call the Tennessee Department of Environment and Conservation, Division of Solid Waste Management, Used Oil Management Program at (800) 237-7018 to determine where to send a letter requesting an Installation Identification Number. The letter should include the following information:

(I) Processor or re-refiner company name;

(II) Owner of the processor or re-refiner company;

(III) Mailing address for the processor or re-refiner;

(IV) Name and telephone number for the processor or re-refiner point of contact;

(V) Type of used oil activity (i.e., process only, process and re-refine);

(VI) Location of the processor or re-refiner facility.

(c) General Facility Standards [40 CFR 279.52]

1. Preparedness and Prevention

Owners and operators of used oil processing and re-refining facilities must comply with the following requirements:

(i) Maintenance and Operation of Facility

Facilities must be maintained and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of used oil to air, soil, or surface water which could threaten human health or the environment.

(ii) Required Equipment

All facilities must be equipped with the following, unless none of the hazards posed by used oil handled at the facility could require a

particular kind of equipment specified in items (6)(c)1(ii)(I)-(IV) of this Rule:

(I) An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel;

(II) 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;

(III) 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

(IV) Water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems.

(iii) Testing and Maintenance of Equipment

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.

(iv) Access to Communications or Alarm System

(I) Whenever used oil 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 in subpart (6)(c)1(ii) of this Rule.

(II) If there is ever just one employee on the premises while the facility is operating, the employee 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 in subpart (6)(c)1(ii) of this Rule.

(v) Required Aisle Space

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.

(vi) Arrangements With Local Authorities

(I) The owner or operator must attempt to make the following arrangements, as appropriate for the type of used oil handled at the 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 used oil 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 used oil handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility.

(II) Where State or local authorities decline to enter into such arrangements, the owner or operator must document the refusal in the operating record.

2. Contingency Plan and Emergency Procedures

Owners and operators of used oil processing and re-refining facilities must comply with the following requirements:

(i) Purpose and Implementation of Contingency Plan

(I) Each owner or operator must have a contingency plan for the 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 used oil to air, soil, or surface water.

(II) The provisions of the plan must be carried out immediately whenever there is a fire, explosion, or release of used oil which could threaten human health or the environment.

(ii) Content of Contingency Plan

(I) The contingency plan must describe the actions facility personnel must take to comply with subparts (6)(c)2(i) and (vi) of this Rule in response to fires, explosions, or any unplanned sudden or non-sudden release of used oil to air, soil, or surface water at the facility.

(II) If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with federal 40 CFR 112, or 40 CFR 1510, or some other emergency or contingency plan, the owner or operator need only amend that plan to incorporate used oil management provisions that are sufficient to comply with the requirements of this Rule.

(III) 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 subpart (6)(c)1(vi) of this Rule.

(IV) The plan must list names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see subpart 2(V) of this subparagraph), 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.

(V) 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.

(VI) 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 used oil or fires).

(iii) Copies of Contingency Plan

A copy of the contingency plan and all revisions to the plan must be:

(I) Maintained at the facility; and

(II) 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.

(iv) Amendment of Contingency Plan

The contingency plan must be reviewed, and immediately amended, if necessary, whenever:

(I) Applicable regulations are revised;

(II) The plan fails in an emergency;

(III) 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 used oil, or changes the response necessary in an emergency;

(IV) The list of emergency coordinators changes; or

(V) The list of emergency equipment changes.

(v) Emergency Coordinator

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 characteristic of used oil handled, the location of all records within the facility, and facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan.

(Guidance: The emergency coordinator's responsibilities are more fully spelled out in subpart 2(vi) of this subparagraph. Applicable responsibilities for the emergency coordinator vary, depending on factors such as type and variety of used oil handled by the facility, and type and complexity of the facility.)

(vi) Emergency Procedures

(I) Whenever there is an imminent or actual emergency situation, the emergency coordinator (or the 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.

(II) 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 analyses.

(III) 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).

(IV) 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 indicated 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 government official designated as the on-scene coordinator for the geographical area (in the applicable regional contingency plan under federal 40 CFR 1510), the Tennessee Emergency Management Agency (TEMA) (using their 24-hour toll free number 800/262-3300 or 3400) or the National Response Center (using their 24-hour toll free number 800/424-8802). The report must include:

A. Name and telephone number of reporter;

B. Name and address of facility;

C. Time and type of incident (e.g., release, fire);

D. Name and quantity of material(s) involved, to the extent known;

E. The extent of injuries, if any; and

F. The possible hazards to human health, or the environment, outside the facility.

(V) 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 used oil or hazardous waste at the facility. These measures must include, where applicable, stopping processes and operation, collecting and containing released used oil, and removing or isolating containers.

(VI) If the facility stops operation 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.

(VII) Immediately after an emergency, the emergency coordinator must provide for recycling, storing, or disposing of recovered used oil, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

(VIII) The emergency coordinator must ensure that, in the affected area(s) of the facility:

I. No waste or used oil that may be incompatible with the released material is recycled, 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.

III. The owner or operator must notify the Commissioner, and appropriate State and local authorities, that the facility is in compliance with subitems (6)(c)2(vi)(VIII)I and II of this Rule before operations are resumed in the affected area(s) of the facility.

(IX) 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;

VII. Estimated quantity and disposition of recovered material that resulted from the incident.

(d) Rebuttable Presumption for Used Oil [40 CFR 279.53]

1. To ensure that used oil managed at a processing/re-refining facility is not hazardous waste under the rebuttable presumption of item (2)(a)2(i)(II) of this Rule, the owner or operator of a used oil processing/re-refining facility must determine whether the total halogen content of used oil managed at the facility is above or below 1,000 ppm.

2. The owner or operator must make this determination by:

(i) Testing the used oil; or

(ii) Applying knowledge of the halogen content of the used oil in light of the materials or processes used.

3. If the used oil contains greater than or equal to 1,000 ppm total halogens, it is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in Rule 1200-01-11-.02(4). The owner or operator may

rebut the presumption by demonstrating that the used oil does not contain hazardous waste (for example, by showing that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in Rule 1200-01-11-.02(5)(a) Appendix VIII).

(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.

(e) Used Oil Management [40 CFR 279.54]

Used oil processor/re-refiners are subject to all applicable Spill Prevention, Control and Countermeasures (40 CFR part 112) in addition to the requirements of this paragraph. Used oil processors/re-refiners are also subject to the Underground Storage Tank standards (Rules 1200-1-15-.01 through .11) for used oil stored in underground tanks whether or not the used oil exhibits any characteristics of hazardous waste, in addition to the requirements of this paragraph.

1. Management Units

Used oil processors/re-refiners may not store used oil in units other than tanks, containers, or units subject to regulation under Rule 1200-01-11-.05 or .06.

2. Condition of Units

Containers and aboveground tanks used to store or process used oil at processing and re-refining facilities must be:

(i) In good condition (no severe rusting, apparent structural defects or deterioration); and

(ii) Not leaking (no visible leaks).

3. Secondary Containment For Containers

Containers used to store or process used oil at processing and re-refining facilities must be equipped with a secondary containment system.

(i) The secondary containment system must consist of, at a minimum:

(I) Dikes, berms or retaining walls; and

(II) A floor. The floor must cover the entire area within the dike, berm, or retaining wall; or

(III) An equivalent secondary containment system.

(ii) The entire containment system, including walls and floor, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater, or surface water.

4. Secondary Containment For Existing Aboveground Tanks

Existing aboveground tanks used to store or process used oil at processing and re-refining facilities must be equipped with a secondary containment system.

(i) The secondary containment system must consist of, at a minimum:

(I) Dikes, berms or retaining walls; and

(II) A floor. The floor must cover the entire area within the dike, berm, or retaining wall except areas where existing portions of the tank meet the ground; or

(III) An equivalent secondary containment system.

(ii) The entire containment system, including walls and floor, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater, or surface water.

5. Secondary Containment For New Aboveground Tanks

New aboveground tanks used to store or process used oil at processing and re-refining facilities must be equipped with a secondary containment system.

(i) The secondary containment system must consist of, at a minimum:

(I) Dikes, berms or retaining walls; and

(II) A floor. The floor must cover the entire area within the dike, berm, or retaining wall; or

(III) An equivalent secondary containment system.

(ii) The entire containment system, including walls and floor, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater, or surface water.

6. Labels

(i) Containers and aboveground tanks used to store or process used oil at processing and re-refining facilities must be labeled or marked clearly with the words "Used Oil."

(ii) Fill pipes used to transfer used oil into underground storage tanks at transfer facilities must be labeled or marked clearly with the words "Used Oil." Where fill pipes are visually separated from the tanks (e.g., by a wall or other obstruction), the fill pipes must be labeled on both sides of the obstruction.

7. Response to Releases

Upon detection of a release of used oil to the environment that is not subject to the requirements of the Underground Storage Tank standards (Rules 1200-1-15-.01 through .11), and which occurred after July 1, 1993, the effective date of the used oil regulations in Tennessee, an owner/operator must perform the following cleanup steps:

(i) Stop the release;

(ii) Contain the released used oil;

(iii) Clean up and manage properly the released used oil and other materials; and

(iv) If necessary, repair or replace any leaking used oil storage containers or tanks prior to returning them to service.

8. Closure

(i) Aboveground Tanks

Owners and operators who store or process used oil in aboveground tanks must comply with the following requirements:

(I) At closure of a tank system, the owner or operator must remove or decontaminate used oil residues in tanks, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil, and manage them as hazardous waste, unless the materials are not hazardous waste under this Rule.

(II) If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in item (6)(e)8(i)(I) of this Rule, 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 hazardous waste landfills (Rule 1200-01-11-.05(14)(k)).

(ii) Containers

Owners and operators who store used oil in containers must comply with the following requirements:

(I) At closure, containers holding used oils or residues of used oil must be removed from the site;

(II) The owner or operator must remove or decontaminate used oil residues, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil, and manage them as hazardous waste, unless the materials are not hazardous waste under Rule 1200-01-11-.02.

(f) Analysis Plan [40 CFR 279.55]

Owners or operators of used oil processing and re-refining facilities must develop and follow a written analysis plan describing the procedures that will be used to comply with the analysis requirements of subparagraph (6)(d) of this Rule and, if applicable, subparagraph (8)(c) of this Rule. The owner or operator must keep the plan at the facility.

1. Rebuttable Presumption For Used Oil in Subparagraph (6)(d) of this Rule

At a minimum, the plan must specify the following:

(i) Whether sample analyses or knowledge of the halogen content of the used oil will be used to make this determination.

(ii) If sample analyses are used to make this determination:

(I) The sampling method used to obtain representative samples to be analyzed. A representative sample may be obtained using either:

I. One of the sampling methods in Appendix I of Rule 1200-01-11-.02; or

II. A method shown to be equivalent under Rules 1200-01-11-.01(3)(a) and (b);

(II) The frequency of sampling to be performed, and whether the analysis will be performed on-site or off-site; and

(III) The methods used to analyze used oil for the parameters specified in subparagraph (6)(d) of this Rule; and

(iii) The type of information that will be used to determine the halogen content of the used oil.

2. On-specification Used Oil Fuel in Subparagraph (8)(c) of this Rule

At a minimum, the plan must specify the following if subparagraph (8)(c) of this Rule is applicable:

(i) Whether sample analyses or other information will be used to make this determination;

(ii) If sample analyses are used to make this determination:

(I) The sampling method used to obtain representative samples to be analyzed. A representative sample may be obtained using either:

I. One of the sampling methods in Rule 1200-01-11-.02 Appendix I; or

II. A method shown to be equivalent under Rule 1200-01-11-.01(3)(a) and (b);

(II) Whether used oil will be sampled and analyzed prior to or after any processing/re-refining;

(III) The frequency of sampling to be performed, and whether the analysis will be performed on-site or off-site; and

(IV) The methods used to analyze used oil for the parameters specified in subparagraph (8)(c) of this Rule; and

(iii) The type of information that will be used to make the on-specification used oil fuel determination.

(g) Tracking [40 CFR 279.56]

1. Acceptance

Used oil processors/re-refiners must keep a record of each used oil shipment accepted for processing/re-refining. These records may take the form of a log, invoice, manifest, bill of lading or other shipping documents. Records for each shipment must include the following information:

(i) The name and address of the transporter who delivered the used oil to the processor/re-refiner;

(ii) The name and address of the generator or processor/re-refiner from whom the used oil was sent for processing/re-refining;

(iii) The Installation Identification Number of the transporter who delivered the used oil to the processor/re-refiner;

(iv) The Installation Identification Number (if applicable) of the generator or processor/re-refiner from whom the used oil was sent for processing/re-refining;

(v) The quantity of used oil accepted; and

(vi) The date of acceptance.

2. Delivery

Used oil processor/re-refiners must keep a record of each shipment of used oil that is shipped to a used oil burner, processor/re-refiner, or disposal facility. These records may take the form of a log, invoice, manifest, bill of lading or other shipping documents. Records for each shipment must include the following information:

(i) The name and address of the transporter who delivers the used oil to the burner, processor/re-refiner or disposal facility;

(ii) The name and address of the burner, processor/re-refiner or disposal facility who will receive the used oil;

(iii) The Installation Identification Number of the transporter who delivers the used oil to the burner, processor/re-refiner or disposal facility;

(iv) The Installation Identification Number of the burner, processor/re-refiner, or disposal facility who will receive the used oil;

(v) The quantity of used oil shipped; and

(vi) The date of shipment.

3. Record Retention

The records described in part (6)(g)1 and 2 of this Rule must be maintained for at least three years.

(h) Operating Record and Reporting

1. Operating Record [40 CFR 279.57(a)]

(i) The owner or operator must keep a written operating record at the facility.

(ii) The following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility;

(I) Records and results of used oil analyses performed as described in the analysis plan required under subparagraph (6)(f) of this Rule; and

(II) Summary reports and details of all incidents that require implementation of the contingency plan as specified in part (6)(c)2 of this Rule.

2. Annual Report

A used oil processor/re-refiner and/or hauler/transporter 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 in accordance with the instructions accompanying the form. The annual report must cover activities during the previous calendar year and must include the following information:

(i) The Installation Identification Number (issued by the Department or EPA), name, and address of the processor/re-refiner and/or hauler/transporter;

(ii) The calendar year covered by the report;

(iii) Other information requested by the Department, including but not limited to the following:

(I) For a Processor/Re-refiner, the quantities of used oil accepted for processing/re-refining and the manner in which the used oil is processed/re-refined, including the specific processes employed; and

(II) For a hauler/transporter, the type and quantity of used oil transported, collected and recycled; and

(iv) The certification signed by the owner or operator or his authorized representative.

(i) Off-site Shipments of Used Oil [40 CFR 279.58].

Used oil processors/re-refiners who initiate shipments of used oil off-site must ship the used oil using a used oil transporter who has obtained an Installation Identification Number.

(j) Management of Residues [40 CFR 279.59]

Owners and operators who generate residues from the storage, processing, or re-refining of used oil must manage the residues as specified in part (2)(a)5 of this Rule.

(7) Standards for Used Oil Burners Who Burn Off-Specification Used Oil for Energy Recovery [40 CFR 279 Subpart G]

(a) Applicability [40 CFR 279.60]

1. General

The requirements of this paragraph apply to used oil burners except as specified in subparts (7)(a)1(i) and (ii) of this Rule. A used oil burner is a facility where used oil not meeting the specification requirements in subparagraph (2)(b) of this Rule is burned for energy recovery in devices identified in part (7)(b)1 of this Rule. Facilities burning used oil for energy recovery under the following conditions are not subject to this paragraph:

(i) The used oil is burned by the generator in an on-site space heater under the provisions of subparagraph (3)(d) of this Rule; or

(ii) The used oil is burned by a processor/re-refiner for purposes of processing used oil, which is considered burning incidentally to used oil processing.

2. Other Applicable Provisions

Used oil burners who conduct the following activities are also subject to the requirements of other applicable provisions of this Rule as indicated below.

(i) Burners who generate used oil must also comply with paragraph (3) of this Rule;

(ii) Burners who transport used oil must also comply with paragraph (5) of this Rule;

(iii) Except as provided in Rule 1200-01-11-.11(7)(b)2, burners who process or re-refine used oil must also comply with paragraph (6) of this Rule;

(iv) Burners who direct shipments of off-specification used oil from their facility to a used oil burner or first claim that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in subparagraph (2)(b) of this rule must also comply with paragraph (8) of this Rule; and

(v) Burners who dispose of used oil, including the use of used oil as a dust suppressant, must comply with paragraph (9) of this Rule.

3. Specification Fuel

This paragraph does not apply to persons burning used oil that meets the used oil fuel specification of subparagraph (2)(b) of this Rule, provided that the burner complies with the requirements of paragraph (8) of this Rule.

(b) Restrictions on Burning [40 CFR 279.61]

1. Off-specification used oil fuel may be burned for energy recovery in only the following devices:

(i) Industrial furnaces identified in Rule 1200-01-11-.01(2)(a);

(ii) Boilers, as defined in Rule 1200-01-11-.01(2)(a) that are identified 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;

(II) Utility boilers used to produce electric power, steam, heated or cooled air, or other gases or fluids for sale; or

(III) Used oil-fired space heaters provided that the burner meets the provisions of subparagraph (3)(d) of this Rule; or

(iii) Hazardous waste incinerators subject to regulation under Rule 1200-01-11-.05(15) or .06(15).

2. (i) With the following exception, used oil burners may not process used oil unless they also comply with the requirements of paragraph (6) of this Rule.

(ii) Used oil burners may aggregate off-specification used oil with virgin oil or on-specification used oil for purposes of burning, but may not aggregate for purposes of producing on-specification used oil.

(c) Notification [40 CFR 279.62]

1. Identification Numbers

Used oil burners which have not previously complied with the notification requirements of Rule 1200-01-11-.03(2) must comply with these requirements and obtain an Installation Identification Number.

2. Mechanics of Notification

A used oil burner who has not received an Installation Identification Number may obtain one by notifying the Commissioner of their used oil activity by submitting either:

(i) A completed Solid Waste Management Notification, Solid Waste Management Notification Schedule B, and Hazardous Waste Notification Forms; or

(To obtain the forms call Tennessee Department of Environment and Conservation, Division of Solid Waste Management (800) 237-7018)

(ii) A letter requesting an Installation Identification Number. Call the Tennessee Department of Environment and Conservation, Division of Solid Waste Management, Used Oil Management Program at (800) 237-7018 to determine where to send a letter requesting an Installation Identification Number. The letter should include the following information:

(I) Burner company name;

(II) Owner of the burner company;

(III) Mailing address for the burner;

(IV) Name and telephone number for the burner point of contact;

(V) Type of used oil activity; and

(VI) Location of the burner facility.

(d) Rebuttable Presumption for Used Oil [40 CFR 279.63]

1. To ensure that used oil managed at a used oil burner facility is not hazardous waste under the rebuttable presumption of item (2)(a)2(i)(II) of this Rule, a used oil burner must determine whether the total halogen content of used oil managed at the facility is above or below 1,000 ppm.

2. The used oil burner must determine if the used oil contains above or below 1,000 ppm total halogens by:

(i) Testing the used oil;

(ii) Applying knowledge of the halogen content of the used oil in light of the materials or processes used; or

(iii) If the used oil has been received from a processor/re-refiner subject to regulation under paragraph (6) of this Rule; using information provided by the processor/re-refiner.

3. If the used oil contains greater than or equal to 1,000 ppm total halogens, it is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in Rule 1200-01-11-.02(4). The owner or operator may rebut the presumption by demonstrating that the used oil does not contain hazardous waste (for example, by showing that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in Rule 1200-01-11-.02(5) Appendix VIII).

(i) The rebuttable presumption does not apply to metalworking oils/fluids containing chlorinated paraffins, if they are processed, through a tolling arrangement as described in part (3)(e) of this Rule, 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.

4. Record Retention

Records of analyses conducted or information used to comply with parts (7)(d)1,2 and 3 of this Rule must be maintained by the burner for at least 3 years.

(e) Used Oil Storage [40 CFR 279.64]

Used oil burners are subject to all applicable Spill Prevention, Control and Countermeasures (40 CFR part 112) in addition to the requirements of this paragraph. Used oil burners are also subject to the Underground Storage Tank standards (Rules 1200-1-15-.01 through .11) for used oil stored in underground tanks whether or not the used oil exhibits any characteristics of hazardous waste, in addition to the requirements of this paragraph.

1. Storage Units

Used oil burners may not store used oil in units other than tanks, containers, or units subject to regulation under Rules 1200-01-11-.05 or .06.

2. Condition of Units

Containers and aboveground tanks used to store oil at burner facilities must be:

(i) In good condition (no severe rusting, apparent structural defects or deterioration); and

(ii) Not leaking (no visible leaks).

3. Secondary Containment For Containers

Containers used to store used oil at burner facilities must be equipped with a secondary containment system.

(i) The secondary containment system must consist of, at a minimum:

(I) Dikes, berms or retaining walls; and

(II) A floor. The floor must cover the entire area within the dike, berm, or retaining wall.

(ii) The entire containment system, including walls and floor, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater, or surface water.

4. Secondary Containment For Existing Aboveground Tanks

Existing aboveground tanks used to store used oil at burner facilities must be equipped with a secondary containment system.

(i) The secondary containment system must consist of, at a minimum:

(I) Dikes, berms or retaining walls; and

(II) A floor. The floor must cover the entire area within the dike, berm, or retaining wall except areas where existing portions of the tank meet the ground; or

(III) An equivalent secondary containment system.

(ii) The entire containment system, including walls and floor, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater, or surface water.

5. Secondary Containment For New Aboveground Tanks

New aboveground tanks used to store used oil at burner facilities must be equipped with a secondary containment system.

(i) The secondary containment system must consist of, at a minimum:

(I) Dikes, berms or retaining walls; and

(II) A floor. The floor must cover the entire area within the dike, berm, or retaining wall; or

(III) An equivalent secondary containment system.

(ii) The entire containment system, including walls and floor, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater, or surface water.

6. Labels

(i) Containers and aboveground tanks used to store used oil at burner facilities must be labeled or marked clearly with the words "Used Oil."

(ii) Fill pipes used to transfer used oil into underground storage tanks at burner facilities must be labeled or marked clearly with the words "Used Oil."

7. Response to Releases

Upon detection of a release of used oil to the environment that is not subject to the requirements of the Underground Storage Tank standards (Rules 1200-1-15-.01 through .11), and which occurred after July 1, 1993, the effective date of the used oil regulations in Tennessee, a burner must perform the following cleanup steps:

(i) Stop the release;

(ii) Contain the released used oil;

(iii) Clean up and manage properly the released used oil and other materials; and

(iv) If necessary, repair or replace any leaking used oil storage containers or tanks prior to returning them to service.

(f) Tracking [40 CFR 279.65]

1. Acceptance

Used oil burners must keep a record of each used oil shipment accepted for burning. These records may take the form of a log, invoice, manifest, bill of lading, or other shipping documents. Records for each shipment must include the following information:

(i) The name and address of the transporter who delivered the used oil to the burner;

(ii) The name and address of the generator or processor/re-refiner from whom the used oil was sent to the burner;

(iii) The Installation Identification Number of the transporter who delivered the used oil to the burner;

(iv) The Installation Identification Number (if applicable) of the generator or processor/re-refiner from whom the used oil was sent to the burner;

(v) The quantity of used oil accepted; and

(vi) The date of acceptance.

2. Record Retention

The records described in part (7)(f)1 of this Rule must be maintained for at least three years.

(g) Notices [40 CFR 279.66]

1. Certification

Before a burner accepts the first shipment of off-specification used oil fuel from a generator, transporter, or processor/re-refiner, the burner must provide to the generator, transporter, or processor/re-refiner a one-time written and signed notice certifying that:

(i) The burner has notified the Department stating the location and general description of his used oil management activities; and

(ii) The burner will burn the used oil only in an industrial furnace or boiler identified in part (7)(b)1 of this Rule .

2. Certification Retention

The certification described in part (7)(g)1 of this Rule must be maintained for three years from the date the burner last receives shipment of off-specification used oil from that generator, transporter, or processor/re-refiner.

(h) Management of Residues [40 CFR 279.67]

Burners who generate residues from the storage or burning of used oil must manage the residues as specified in part (2)(a)5 of this Rule.

(8) Standards for Used Oil Fuel Marketers [40 CFR 279 Subpart H]

(a) Applicability [40 CFR 279.70]

1. Any person who conducts either of the following activities is subject to the requirements of this paragraph:

   (i) Directs a shipment of off-specification used oil from their facility to a used oil burner; or

   (ii) First claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in subparagraph (2)(b) of this Rule.

2. The following persons are not marketers subject to this paragraph:

   (i) Used oil generators, and transporters who transport used oil received only from generators, unless the generator or transporter directs a shipment of off-specification used oil from their facility to a used oil burner. However, processors/re-refiners who burn some used oil fuel for purposes of processing are considered to be burning incidentally to processing. Thus, generators and transporters who direct shipments of off-specification used oil to processor/re-refiners who incidentally burn used oil are not marketers subject to this paragraph;

   (ii) Persons who direct shipments of on-specification used oil and who are not the first person to claim the oil meets the used oil fuel specifications of subparagraph (2)(b) of this Rule.

3. Any person subject to the requirements of this paragraph must also comply with one of the following:

   (i) Paragraph (3) of this Rule - Standards for Used Oil Generators;

   (ii) Paragraph (5) of this Rule - Standards for Used Oil Transporters and Transfer Facilities;

   (iii) Paragraph (6) of this Rule - Standards for Used Oil Processors and Re-refiners; or

   (iv) Paragraph (7) of this Rule - Standards for Used Oil Burners who Burn Off-Specification Used Oil for Energy Recovery.

(b) Prohibitions [40 CFR 279.71]

A used oil fuel marketer may initiate a shipment of off-specification used oil only to a used oil burner who:

1. Has an Installation Identification Number; and

2. Burns the used oil in an industrial furnace or boiler identified in part (7)(b)1 of this Rule.

(c) On-specification Used Oil Fuel [40 CFR 279.72]

1. Analysis of Used Oil Fuel

A generator, transporter, processor/re-refiner, or burner may determine that used oil that is to be burned for energy recovery meets the fuel specifications of subparagraph (2)(b) of this Rule by performing analyses or obtaining copies of analyses or other information documenting that the used oil fuel meets the specifications.

2. Record Retention

A generator, transporter, processor/re-refiner, or burner who first claims that used oil that is to be burned for energy recovery meets the specifications for used oil fuel under subparagraph (2)(b) of this Rule, must keep copies of analyses of the used oil (or other information used to make the determination) for three years.

(d) Notification [40 CFR 279.73]

1. Identification Numbers

A used oil fuel marketer subject to the requirements of this subpart who has not previously complied with the notification requirements of Rule 1200-01-11-.03(2) must comply with these requirements and obtain an Installation Identification Number.

2. A marketer who has not received an Installation Identification Number may obtain one by notifying the Commissioner of their used oil activity by submitting either:

(i) A completed Solid Waste Management Notification, Solid Waste Management Notification Schedule B, and Hazardous Waste Notification Forms; or

(To obtain the forms call the Tennessee Department of Environment and Conservation, Division of Solid Waste Management at (800) 237-7018)

(ii) A letter requesting an Installation Identification Number. The letter should include the following information:

(I) Marketer company name;

(II) Owner of the marketer;

(III) Mailing address for the marketer;

(IV) Name and telephone number for the marketer point of contact; and

(V) Type of used oil activity (i.e., generator directing shipments of off-specification used oil to a burner).

(e) Tracking [40 CFR 279.74]

1. Off-specification Used Oil Delivery

Any used oil marketer who directs a shipment of off-specification used oil to a burner must keep a record of each shipment of used oil to a used oil burner. These records may take the form of a log, invoice, manifest, bill of lading or other shipping documents. Records for each shipment must include the following information:

(i) The name and address of the transporter who delivers the used oil to the burner;

(ii) The name and address of the burner who will receive the used oil;

(iii) The Installation Identification Number of the transporter who delivers the used oil to the burner;

(iv) The Installation Identification Number of the burner;

(v) The quantity of used oil shipped; and

(vi) The date of shipment.

2. On-specification Used Oil Delivery

A generator, transporter, processor/re-refiner, or burner who first claims that used oil that is to be burned for energy recovery meets the fuel specifications under subparagraph (2)(b) of this Rule must keep a record of each shipment of used oil to the facility to which it delivers the used oil. Records for each shipment must include the following information:

(i) The name and address of the facility receiving the shipment;

(ii) The quantity of used oil fuel delivered;

(iii) The date of shipment or delivery; and

(iv) A cross-reference to the record of used oil analysis or other information used to make the determination that the oil meets the specification as required under part (8)(c)1 of this Rule.

3. Record Retention

The records described in parts (8)(e)1 and 2 of this Rule must be maintained for at least three years.

(f) Notices [40 CFR 279.75]

1. Certification

Before a used oil generator, transporter, or processor/re-refiner directs the first shipment of off-specification used oil fuel to a burner, he must obtain a one-time written and signed notice from the burner certifying that:

(i) The burner has notified the Department stating the location and general description of used oil management activities; and

(ii) The burner will burn the off-specification used oil only in an industrial furnace or boiler identified in part (7)(b)1 of this Rule.

2. Certification Retention

The certification described in part (8)(f)1 of this Rule must be maintained for three years from the date the last shipment of off-specification used oil is shipped to the burner.

(9) Standards for Use as a Dust Suppressant and Disposal of Used Oil

(a) Applicability [40 CFR 279.80]

The requirements of this paragraph apply to all used oils that cannot be recycled and are therefore being disposed.

(b) Disposal [40 CFR 279.81]

1. Disposal of Hazardous Used Oils

Used oils that are identified as a hazardous waste and cannot be recycled in accordance with this Rule must be managed in accordance with the hazardous waste management requirements of Rules 1200-01-11-.01 through .07, .09 and .10.

2. Disposal of Nonhazardous Used Oils

Used oils that are not hazardous wastes and cannot be recycled under this Rule must be disposed in accordance with the requirements of T.C.A. §§68-211-101 et seq.

(c) Use as a Dust Suppressant [40 CFR 279.82]

1. The use of used oil as a dust suppressant is prohibited in Tennessee.

Authority: T.C.A. §§4-5-202, 68-211-101 et seq, 68-211-1001 et seq and 68-212-101 et seq.

1200-01-11-.12 Standards For Universal Waste Management [40 CFR Part 273]

(1) General [40 CFR 273 Subpart A]

(a) Scope [40 CFR 273.1]

1. This Rule establishes requirements for managing the following:

(i) Batteries as described in subparagraph (d) of this paragraph;

(ii) Pesticides as described in subparagraph (e) of this paragraph;

(iii) Mercury-containing equipment as described in subparagraph (f) of this paragraph; and

(iv) Lamps as described in subparagraph (g) of this paragraph.

2. This Rule provides an alternative set of management standards in lieu of regulation under Rules 1200-01-11-.01 through .10.

(b) Definitions [40 CFR 273.9]

"Ampule" means an airtight vial made of glass, plastic, metal, or any combination of these materials.

"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.

"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. 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.

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

"Generator" means any person, by site, whose act or process produces hazardous waste identified or listed in Rule 1200-01-11-.02 or whose act first causes a hazardous waste to become subject to regulation.

"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.

"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, lamps, or mercury-containing equipment, 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 the 5,000 kilogram limit is met or exceeded.

“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.

"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.

“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.

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

“Thermostat” means a temperature control device that contains metallic mercury in an ampule attached to a bimetal sensing element, and mercury-containing ampules that have been removed from these temperature control devices in compliance with the requirements of Rule 1200-01-11-.12(2)(d)3(ii) or (3)(d)3(ii).

“Universal Waste” means any of the hazardous wastes listed in Rule 1200-01-11-.12(1)(a) that are subject to the universal waste requirements of Rule 1200-01-11-.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(2)(d)1, 3, or 4, Rule 1200-01-11-.12(3)(d)1, 3, or 4, or

Rule 1200-01-11-.07(1)(c)1(iv)), 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 (except under the provisions of Rule 1200-01-11-.12(4)(b)2).

"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.

(Also, see Rule 1200-01-11-.01(2)(a).)

(c) Applicability -- Household and Conditionally Exempt Small Quantity Generator Waste [40 CFR 273.8]

1. Persons managing the wastes listed below may, at their option, manage them under the requirements of this Rule:

(i) Household wastes that are exempt under Rule 1200-01-11-.02(1)(d)2(i) and are also of the same type as the universal wastes defined at subparagraph (b) of this paragraph; and/or

(ii) Conditionally exempt small quantity generator wastes that are exempt under Rule 1200-01-11-.02(1)(e) and are also of the same type as the universal wastes defined at subparagraph (b) of this paragraph.

2. Persons who commingle the wastes described in subparts 1(i) and (ii) of this subparagraph above together with universal waste regulated under this Rule must manage the commingled waste under the requirements of this Rule.

(d) Applicability -- Batteries [40 CFR 273.2]

1. Batteries Covered Under Rule 1200-01-11-.12

(i) The requirements of this Rule apply to persons managing batteries described in subparagraph (b) of this paragraph, except those listed in part 2 of this subparagraph.

(ii) Spent lead-acid batteries which are not managed under Rule 1200-01-11-.09(7), are subject to management under this Rule.

2. Batteries Not Covered Under Rule 1200-01-11-.12

The requirements of this Rule do not apply to persons managing the following batteries:

(i) Spent lead-acid batteries that are managed under Rule 1200-01-11-.09(7).

(ii) Batteries, as described in subparagraph (b) of this paragraph, that are not yet wastes under Rule 1200-01-11-.02, including those that do not meet the criteria for waste generation in part 3 of this subparagraph.

(iii) Batteries, as described in subparagraph (b) of this paragraph, that are not hazardous waste. A battery is a hazardous waste if it exhibits one or more of the characteristics identified in Rule 1200-01-11.02(3).

3. Generation of Waste Batteries

(i) A used battery becomes a waste on the date it is discarded (e.g., when sent for reclamation).

(ii) An unused battery becomes a waste on the date the handler decides to discard it.

(e) Applicability - Pesticides [40 CFR 273.3]

1. Pesticides Covered Under Rule 1200-01-11-.12

The requirements of this Rule apply to persons managing pesticides described in subparagraph (b) of this paragraph, meeting the following conditions, except those listed in part 2 of this subparagraph:

(i) Recalled pesticides that are:

(I) Stocks of a suspended and canceled pesticide that are part of a voluntary or mandatory recall under FIFRA Section 19(b), including, but not limited to those owned by the registrant responsible for conducting the recall; or

(II) Stocks of a suspended or cancelled pesticide, or a pesticide that is not in compliance with FIFRA, that are part of a voluntary recall by the registrant.

(ii) Stocks of other unused pesticide products that are collected and managed as part of a waste pesticide collection program.

2. Pesticides Not Covered Under Rule 1200-01-11-.12

The requirements of this Rule do not apply to persons managing the following pesticides:

(i) Recalled pesticides described in subpart 1(i) of this subparagraph, and unused pesticide products described in subpart 1(ii) of this subparagraph, that are managed by farmers in compliance with Rule 1200-01-11-.03(1)(a)6 that addresses pesticides disposed of on the farmer's own farm in a manner consistent with the disposal instructions on the pesticide label, providing the container is triple rinsed in accordance with Rule 1200-01-11-.02(1)(g)2(iii);

(ii) Pesticides not meeting the conditions set forth in part 1 of this subparagraph. These pesticides must be managed in compliance with the hazardous waste regulations in Rules 1200-01-11-.01 through .10;

(iii) Pesticides that are not wastes under Rule 1200-01-11-.02, including those that do not meet the criteria for waste generation in part 3 of this subparagraph or those that are not wastes as described in part 4 of this subparagraph; and

(iv) Pesticides that are not hazardous waste. A pesticide is a hazardous waste if it is listed in Rule 1200-01-11-.02(4) or if it exhibits one or more of the characteristics identified in Rule 1200-01-11-.02(3).

3. Generation of Waste Pesticides

(i) A recalled pesticide described in subpart 1(i) of this subparagraph becomes a waste on the first date on which both of the following conditions apply:

(I) The generator of the recalled pesticide agrees to participate in the recall; and

(II) The person conducting the recall decides to discard (e.g., burn the pesticide for energy recovery).

(ii) An unused pesticide product described in subpart 1(ii) of this subparagraph becomes a waste on the date the generator decides to discard it.

4. Pesticides That Are Not Wastes

The following pesticides are not wastes:

(i) Recalled pesticides described in subpart 1(i) of this subparagraph, provided that the person conducting the recall:

(I) Has not made a decision to discard (e.g., burn for energy recovery) the pesticide. Until such a decision is made, the pesticide does not meet the definition of "solid waste" under Rule 1200-01-11-.02(1)(b); thus the pesticide is not a hazardous waste and is not subject to hazardous waste requirements, including those of this Rule. This pesticide remains subject to the requirements of FIFRA; or

(II) Has made a decision to use a management option that, under Rule 1200-01-11-.02(1)(b), does not cause the pesticide to be a solid waste (i.e., the selected option is use (other than use constituting disposal) or reuse (other than burning for energy recovery) or reclamation). Such a pesticide is not a solid waste and therefore is not a hazardous waste, and is not subject to the hazardous waste requirements including this Rule. This pesticide, including a recalled pesticide that is exported to a foreign destination for use or reuse, remains subject to the requirements of FIFRA.

(ii) Unused pesticide products described in subpart 1(ii) of this subparagraph, if the generator of the unused pesticide product has not decided to discard (e.g., burn for energy recovery) them. These pesticides remain subject to the requirements of FIFRA.

(f) Applicability – Mercury-containing Equipment [40 CFR 273.4]

1. Mercury-containing Equipment Covered Under Rule 1200-01-11-.12

The requirements of this Rule apply to persons managing mercury-containing equipment described in subparagraph (b) of this paragraph, except those listed in part 2 of this subparagraph.

2. Mercury-containing Equipment Not Covered Under Rule 1200-01-11-.12

The requirements of this Rule do not apply to persons managing the following mercury-containing equipment:

(i) Mercury-containing equipment that are not yet wastes under Rule 1200-01-11-.02. Part 3 of this subparagraph describes when mercury-containing equipment become wastes.

(ii) Mercury-containing equipment that are not hazardous wastes. Mercury-containing equipment is a hazardous waste if it exhibits one or more of the characteristics identified in Rule 1200-01-11-.02(3); and

(iii) Equipment and devices from which the mercury-containing components have been removed.

3. Generation of Waste Mercury-containing Equipment

(i) Used mercury-containing equipment becomes a waste on the date it is discarded (e.g., sent for reclamation).

(ii) Unused mercury-containing equipment becomes a waste on the date the handler decides to discard it.

(g) Applicability - Lamps [40 CFR 273.5]

1. Lamps covered under Rule 1200-01-11-.12.

The requirements of this Rule apply to persons managing lamps described in subparagraph (b) of this paragraph, except those listed in part 2 of this subparagraph.

2. Lamps not covered under Rule 1200-01-11-.12.

The requirements of this Rule do not apply to persons managing the following lamps:

(i) Lamps that are not yet wastes under Rule 1200-01-11-.02. Part 3 of this subparagraph describes when lamps become wastes.

(ii) Lamps that are not hazardous waste. A lamp is a hazardous waste if it exhibits one or more of the characteristics identified in Rule 1200-01-11-.02(3).

3. Generation of Waste Lamps.

(i) A used lamp becomes a waste on the date it is discarded.

(ii) A used or an unused lamp becomes a waste on the date the handler decides to discard it.

(h) (RESERVED) [40 CFR 273.6]

(i) (RESERVED) [40 CFR 273.7]

(2) Standards for Small Quantity Handlers of Universal Waste [40 CFR 273 Subpart B]

(a) Applicability [40 CFR 273.10]

This paragraph applies to small quantity handlers of universal waste (as defined in subparagraph (1)(b) of this Rule).

(b) Prohibitions [40 CFR 273.11]

A small quantity handler of universal waste is:

1. Prohibited from disposing of universal waste; and

2. Prohibited from diluting or treating universal waste, except by responding to releases as provided in subparagraph (h) of this paragraph; or by managing specific wastes as provided in subparagraph (d) of this paragraph.

(c) Notification [40 CFR 273.12]

A small quantity handler of universal waste is not required to notify the Commissioner of universal waste handling activities.

(d) Waste Management [40 CFR 273.13]

1. Universal Waste Batteries:

A small quantity handler of universal waste must manage universal waste batteries in a way that prevents releases of any universal waste or component of a universal waste to the environment, as follows:

(i) A small quantity handler of universal waste must contain any universal waste battery that shows evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions in a container. The container must be closed, structurally sound, compatible with the contents of the battery, and must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.

(ii) A small quantity handler of universal waste may conduct the following activities as long as the casing of each individual battery cell is not breached and remains intact and closed (except that cells may be opened to remove electrolyte but must be immediately closed after removal):

(I) sorting batteries by type;

(II) mixing battery types in one container;

(III) discharging batteries so as to remove the electric charge;

(IV) regenerating used batteries;

(V) disassembling batteries or battery packs into individual batteries or cells;

(VI) removing batteries from consumer products; or

(VII) removing electrolyte from batteries.

(iii) A small quantity handler of universal waste who removes electrolyte from batteries, or who generates other solid waste (e.g., battery pack materials, discarded consumer products) as a result of the activities listed above, must determine whether the electrolyte and/or other solid waste exhibit a characteristic of hazardous waste identified in Rule 1200-01-11-.02(3).

(I) If the electrolyte and/or other solid waste exhibit a characteristic of hazardous waste, it is subject to all applicable requirements of Rules 1200-01-11-.01 through .10. The handler is considered the generator of the hazardous electrolyte and/or other waste and is subject to Rule 1200-01-11-.03.

(II) If the electrolyte or other solid waste is not hazardous, the handler may manage the waste in any way that is in compliance with applicable federal, state or local solid waste regulations.

2. Universal Waste Pesticides

A small quantity handler of universal waste must manage universal waste pesticides in a way that prevents releases of any universal waste or component of a universal waste to the environment. The universal waste pesticides must be contained in one or more of the following:

(i) A container that remains closed, structurally sound, compatible with the pesticide, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions; or

(ii) A container that does not meet the requirements of subpart (i) of this part, provided that the unacceptable container is overpacked in a container that does meet the requirements of subpart (i) of this part; or

(iii) A tank that meets the requirements of Rule 1200-01-11-.05(10), except for part (h)3, and subparagraphs (k) and (l); or

(iv) A transport vehicle or vessel that is closed, structurally sound, compatible with the pesticide, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.

3. Mercury-containing Equipment:

A small quantity handler of universal waste must manage universal waste mercury-containing equipment in a way that prevents releases of any universal waste or component of a universal waste to the environment, as follows:

(i) A small quantity handler of universal waste must place in a container any universal waste mercury-containing equipment with noncontained elemental mercury or that shows evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions in a container. The container must be closed, structurally sound, compatible with the contents of the device, must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions, and must be reasonably designed to prevent the escape of mercury into the environment by volatilization or any other means.

(ii) A small quantity handler of universal waste may remove mercury-containing ampules from universal waste mercury-containing equipment provided the handler:

(I) Removes and manages the ampules in a manner designed to prevent breakage of the ampules;

(II) Removes the ampules only over or in a containment device (e.g., tray or pan sufficient to collect and contain any mercury released from an ampule in case of breakage);

(III) Ensures that a mercury clean-up system is readily available to immediately transfer any mercury resulting from spills or leaks from broken ampules, from the containment device to a container that meets the requirements of Rule 1200-01-11-.03(4)(e);

(IV) Immediately transfers any mercury resulting from spills or leaks from broken ampules from the containment device to a container that meets the requirements of Rule 1200-01-11-.03(4)(e);

(V) Ensures that the area in which ampules are removed is well ventilated and monitored to ensure compliance with applicable OSHA exposure levels for mercury;

(VI) Ensures that employees removing ampules are thoroughly familiar with proper waste mercury handling and emergency procedures, including transfer of mercury from containment devices to appropriate containers;

(VII) Stores removed ampules in closed, non-leaking containers that are in good condition;

(VIII) Packs removed ampules in the container with packing materials adequate to prevent breakage during storage, handling, and transportation; and

(iii) A small quantity handler of universal waste mercury-containing equipment that does not contain an ampule may remove the open original housing holding the mercury from universal waste mercury-containing equipment provided the handler:

(I) Immediately seals the original housing holding the mercury with an air-tight seal to prevent the release of any mercury to the environment; and

(II) Follows all requirements for removing ampules and managing removed ampules under subpart (ii) of this part; and

(iv) (I) A small quantity handler of universal waste who removes mercury-containing ampules form mercury-containing equipment or seals mercury from mercury-containing equipment in its original housing must determine whether the following exhibit a characteristic of hazardous waste identified in paragraph (3) of Rule 1200-01-11-.02:

I. Mercury or clean-up residues resulting from spills or leaks and/or

II. Other solid waste generated as a result of the removal of mercury-containing ampules or housings (e.g., the remaining mercury-containing device).

(II) If the mercury, residues, and/or other solid waste exhibit a characteristic of hazardous waste, it must be managed in compliance with all applicable requirements of Rule 1200-01-11-.01 through .10. The handler is considered the generator of the mercury, residues, and/or other waste and must manage it subject to Rule 1200-01-11-.03.

(III) If the mercury, residues, and/or other solid waste is not hazardous, the handler may manage the waste in any way that is in compliance with applicable federal, state or local solid waste regulations.

4. Universal Waste Lamps.

(i) A small quantity handler of universal waste must manage lamps in a way that prevents releases of any universal waste or component of a universal waste to the environment as follows:

(I) A small quantity handler of universal waste must contain any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps. Such containers and packages must remain closed and must lack evidence of leakage, spillage or damage that could cause leakage under reasonably foreseeable conditions.

(II) A small quantity handler of universal waste must immediately clean up and place in a container any lamp that is broken and must place in a container any lamp that shows evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous constituents to the environment. Containers must be closed, structurally sound, compatible with the contents of the lamps and must lack evidence of leakage, spillage or damage that could cause leakage or releases of mercury or other hazardous constituents to the environment under reasonably foreseeable conditions.

(ii) Small quantity handlers of universal waste mercury-containing lamps may treat mercury-containing lamps for volume reduction at the site

where they were generated under the provisions of Rule 1200-01-11-.12(8) and under the following conditions:

(I) The lamps must be crushed in a system designed and operated to minimize the loss of mercury to the atmosphere. Any air exhausted from the unit shall pass through a well-maintained high efficiency particulate air filter (HEPA) designed to minimize such loss. Detailed records regarding this operation must be kept and made available for review for at least three (3) years, including, but not limited to, the technology employed for crushing, including any certification or testing data provided by the manufacturer of the crushing unit;

(II) The handler immediately transfers any material recovered from a spill or leak to a container that meets the requirements of Rule 1200-01-11-.03(4)(e), and has available equipment necessary to comply with this requirement;

(III) The handler ensures that the area in which the lamps are crushed is well-ventilated and monitored to ensure compliance with applicable Occupational Safety and Health Administration (OSHA) exposure levels for mercury;

(IV) The handler ensures that employees crushing lamps are thoroughly familiar with proper waste mercury handling and emergency procedures, including transfer of mercury from containment devices to appropriate containers; and

(V) The crushed lamps are stored in closed, non-leaking containers that are in good condition (e.g., no severe rusting, apparent structural defects or deterioration), suitable to prevent releases during storage, handling and transportation.

(e) Labeling/Marking [40 CFR 273.14]

A small quantity handler of universal waste must label or mark the universal waste to identify the type of universal waste as specified below:

1. Universal waste batteries (i.e., each battery), or a container in which the batteries are contained, must be labeled or marked clearly with any one of the following phrases: "Universal Waste - Battery(ies)" or "Waste Battery(ies)" or "Used Battery(ies)."

2. A container (or multiple container package unit), tank, transport vehicle or vessel in which recalled universal waste pesticides as described in subpart (1)(e)1(i) of this Rule are contained must be labeled or marked clearly with:

   (i) The label that was on or accompanied the product as sold or distributed; and

   (ii) The words "Universal Waste - Pesticide(s)" or "Waste Pesticide(s)."

3. A container, tank, or transport vehicle or vessel in which unused pesticide products as described in subpart (1)(e)1(ii) of this Rule are contained must be labeled or marked clearly with:

(i) (I) The label that was on the product when purchased, if still legible;

(II) If using the labels described in item (I) of this subpart is not feasible, the appropriate label as required under the Department of Transportation regulation 49 CFR part 172;

(III) If using the labels described in items (I) and (II) of this subpart is not feasible, another label prescribed or designated by the waste pesticide collection program administered or recognized by a state; and

(ii) The words "Universal Waste - Pesticide(s)" or "Waste Pesticide(s)."

4. (i) Universal waste mercury-containing equipment (i.e., each device), or a container in which the equipment is contained, must be labeled or marked clearly with any of the following phrases: “Universal Waste--Mercury Containing Equipment,” “Waste Mercury-Containing Equipment,” or “Used Mercury-Containing Equipment.”

(ii) A universal waste mercury-containing thermostat or container containing only universal waste mercury-containing thermostats may be labeled or marked clearly with any of the following phrases: “Universal Waste--Mercury Thermostats(s),” “Waste Mercury Thermostat(s),” or “Used Mercury Thermostat(s).”

5. Universal waste lamps (i.e., each lamp), or a container or package in which such lamps are contained, must be labeled or marked clearly with any one of the following phrases: “Universal Waste - Lamp(s)” or “Waste Lamp(s)” or “Used Lamp(s).”

(f) Accumulation Time Limits [40 CFR 273.15]

1. A small quantity handler of universal waste may accumulate universal waste for no longer than one year from the date the universal waste is generated, or received from another handler, unless the requirements of part 2 of this subparagraph are met.

2. A small quantity handler of universal waste may accumulate universal waste for longer than one year from the date the universal waste is generated, or received from another handler, if such activity is solely for the purpose of accumulation of such quantities of universal waste as necessary to facilitate proper recovery, treatment, or disposal. However, the handler bears the burden of proving that such activity is solely for the purpose of accumulation of such quantities of universal waste as necessary to facilitate proper recovery, treatment, or disposal.

3. A small quantity handler of universal waste who accumulates universal waste must be able to demonstrate the length of time that the universal waste has been accumulated from the date it becomes a waste or is received. The handler may make this demonstration by:

(i) Placing the universal waste in a container and marking or labeling the container with the earliest date that any universal waste in the container became a waste or was received;

(ii) Marking or labeling each individual item of universal waste (e.g., each battery or thermostat) with the date it became a waste or was received;

(iii) Maintaining an inventory system on-site that identifies the date each universal waste became a waste or was received;

(iv) Maintaining an inventory system on-site that identifies the earliest date that any universal waste in a group of universal waste items or a group of containers of universal waste became a waste or was received;

(v) Placing the universal waste in a specific accumulation area and identifying the earliest date that any universal waste in the area became a waste or was received; or

(vi) Any other method which clearly demonstrates the length of time that the universal waste has been accumulated from the date it becomes a waste or is received.

(g) Employee Training [40 CFR 273.16]

A small quantity handler of universal waste must inform all employees who handle or have responsibility for managing universal waste. The information must describe proper handling and emergency procedures appropriate to the type(s) of universal waste handled at the facility.

(h) Response to Releases [40 CFR 273.17]

1. A small quantity handler of universal waste must immediately contain all releases of universal wastes and other residues from universal wastes.

2. A small quantity handler of universal waste must determine whether any material resulting from the release is hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable requirements of Rules 1200-01-11-.01 through .10. The handler is considered the generator of the material resulting from the release, and must manage it in compliance with Rule 1200-01-11-.03.

(i) Off-site Shipments [40 CFR 273.18]

1. A small quantity handler of universal waste is prohibited from sending or taking universal waste to a place other than another universal waste handler, a destination facility, or a foreign destination.

2. If a small quantity handler of universal waste self-transports universal waste off-site, the handler becomes a universal waste transporter for those self-transportation activities and must comply with the transporter requirements of paragraph (4) of this Rule while transporting the universal waste.

3. If a universal waste being offered for off-site transportation meets the definition of hazardous materials under 49 CFR 171 -180, a small quantity handler of universal waste must package, label, mark and placard the shipment, and prepare the proper shipping papers in accordance with the applicable Department of Transportation regulations under 49 CFR parts 172 - 180.

4. Prior to sending a shipment of universal waste to another universal waste handler, the originating handler must ensure that the receiving handler agrees to receive the shipment.

5. If a small quantity handler of universal waste sends a shipment of universal waste to another handler or to a destination facility and the shipment is rejected by the receiving handler or destination facility, the originating handler must either:

(i) Receive the waste back when notified that the shipment has been rejected, or

(ii) Agree with the receiving handler on a destination facility to which the shipment will be sent.

6. A small quantity handler of universal waste may reject a shipment containing universal waste, or a portion of a shipment containing universal waste that he has received from another handler. If a handler rejects a shipment or a portion of a shipment, he must contact the originating handler to notify him of the rejection and to discuss reshipment of the load. The handler must:

(i) Send the shipment back to the originating handler, or

(ii) If agreed to by both the originating and receiving handler, send the shipment to a destination facility.

7. If a small quantity handler of universal waste receives a shipment containing hazardous waste that is not a universal waste, the handler must immediately notify the Commissioner of the illegal shipment, and provide the name, address, and phone number of the originating shipper. The Commissioner will provide instructions for managing the hazardous waste.

8. If a small quantity handler of universal waste receives a shipment of non-hazardous, non-universal waste, the handler may manage the waste in any way that is in compliance with applicable federal, state or local solid waste regulations.

(j) Tracking Universal Waste Shipments [40 CFR 273.19]

A small quantity handler of universal waste shall follow the procedures set forth for large quantity handlers in subparagraph (3)(j) of this Rule.

(k) Exports [40 CFR 273.20]

A small quantity handler of universal waste who sends universal waste to a foreign destination must:

(Note: See 40 CFR 273.20 for additional requirements.)

1. Comply with the requirements applicable to a primary exporter in Rules 1200-01-11-.03(6)(d),(6)(g)1(i) through (iv), (vi),(g)2 and (6)(h);

2. Export such universal waste only upon consent of the receiving country and in conformance with the EPA Acknowledgment of Consent as defined in Rule 1200-01-11-.03(6); and

3. Provide a copy of the EPA Acknowledgment of Consent for the shipment to the transporter transporting the shipment for export.

(3) Standards for Large Quantity Handlers of Universal Waste [40 CFR 273 Subpart C]

(a) Applicability [40 CFR 273.30]

This paragraph applies to large quantity handlers of universal waste (as defined in subparagraph (1)(b) of this Rule).

(b) Prohibitions [40 CFR 273.31]

A large quantity handler of universal waste is:

1. Prohibited from disposing of universal waste; and

2. Prohibited from diluting or treating universal waste, except by responding to releases as provided in subparagraph (h) of this paragraph; or by managing specific wastes as provided in subparagraph (d) of this paragraph.

(c) Notification [40 CFR 273.32]

1. (i) Except as provided in subparts (ii) and (iii) of this part, a large quantity handler of universal waste must have sent written notification of universal waste management to the Commissioner, and received an Installation Identification Number, before meeting or exceeding the 5,000 kilogram storage limit.

   (ii) A large quantity handler of universal waste who has already notified the Commissioner of his hazardous waste management activities and has received an Installation Identification Number is not required to renotify under this subparagraph.

   (iii) A large quantity handler of universal waste who manages recalled universal waste pesticides as described in subpart (1)(e)1(i) of this Rule and who has sent notification to the Commissioner as required by Rule 1200-01-11-.05 is not required to notify for those recalled universal waste pesticides under this subparagraph.

2. This notification must include:

   (i) The universal waste handler's name and mailing address;

   (ii) The name and business telephone number of the person at the universal waste handler's site who should be contacted regarding universal waste management activities;

   (iii) The address or physical location of the universal waste management activities;

   (iv) A list of all of the types of universal waste managed by the handler (e.g, batteries, pesticides, mercury-containing equipment, and lamps); and

   (v) A statement indicating that the handler is accumulating more than 5,000 kilograms of universal waste at one time.

(d) Waste Management [40 CFR 273.33]

1. Universal Waste - Batteries:

A large quantity handler of universal waste must manage universal waste batteries in a way that prevents releases of any universal waste or component of a universal waste to the environment, as follows:

(i) A large quantity handler of universal waste must contain any universal waste battery that shows evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions in a container. The container must be closed, structurally sound, compatible with the contents of the battery, and must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.

(ii) A large quantity handler of universal waste may conduct the following activities as long as the casing of each individual battery cell is not breached and remains intact and closed (except that cells may be opened to remove electrolyte but must be immediately closed after removal):

(I) Sorting batteries by type;

(II) Mixing battery types in one container;

(III) Discharging batteries so as to remove the electric charge;

(IV) Regenerating used batteries;

(V) Disassembling batteries or battery packs into individual batteries or cells;

(VI) Removing batteries from consumer products; or

(VII) Removing electrolyte from batteries.

(iii) A large quantity handler of universal waste who removes electrolyte from batteries, or who generates other solid waste (e.g., battery pack materials, discarded consumer products) as a result of the activities listed above, must determine whether the electrolyte and/or other solid waste exhibit a characteristic of hazardous waste identified in Rule 1200-01-11-.02(3).

(I) If the electrolyte and/or other solid waste exhibit a characteristic of hazardous waste, it must be managed in compliance with all applicable requirements of Rules 1200-01-11-.01 through .10. The handler is considered the generator of the hazardous electrolyte and/or other waste and is subject to Rule 1200-01-11-.03.

(II) If the electrolyte or other solid waste is not hazardous, the handler may manage the waste in any way that is in compliance with applicable federal, state or local solid waste regulations.

2. Universal Waste - Pesticides:

A large quantity handler of universal waste must manage universal waste pesticides in a way that prevents releases of any universal waste or component

of a universal waste to the environment. The universal waste pesticides must be contained in one or more of the following:

(i) A container that remains closed, structurally sound, compatible with the pesticide, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions; or

(ii) A container that does not meet the requirements of subpart (i) of this part, provided that the unacceptable container is overpacked in a container that does meet the requirements of subpart (i) of this part; or

(iii) A tank that meets the requirements of Rule 1200-01-11-.05(10), except for part (h)3, and subparagraphs (k) and (l); or

(iv) A transport vehicle or vessel that is closed, structurally sound, compatible with the pesticide, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.

3. Universal Waste – Mercury-containing Equipment:

A large quantity handler of universal waste must manage universal waste mercury-containing equipment in a way that prevents releases of any universal waste or component of a universal waste to the environment, as follows:

(i) A large quantity handler of universal waste must place in a container any universal waste mercury-containing equipment with non-contained elemental mercury or that shows evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. The container must be closed, structurally sound, compatible with the contents of the device, must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions, and must be reasonably designed to prevent the escape of mercury into the environment by volatilization or any other means.

(ii) A large quantity handler of universal waste may remove mercury-containing ampules from universal waste mercury-containing equipment provided the handler:

(I) Removes and manages the ampules in a manner designed to prevent breakage of the ampules;

(II) Removes the ampules only over or in a containment device (e.g., tray or pan sufficient to contain any mercury released from an ampule in case of breakage);

(III) Ensures that a mercury clean-up system is readily available to immediately transfer any mercury resulting from spills or leaks from broken ampules, from the containment device to a container that meets the requirements of Rule 1200-01-11-.03(4)(e);

(IV) Immediately transfers any mercury resulting from spills or leaks from broken ampules from the containment device to a container that meets the requirements of Rule 1200-01-11-.03(4)(e);

(V) Ensures that the area in which ampules are removed is well ventilated and monitored to ensure compliance with applicable OSHA exposure levels for mercury;

(VI) Ensures that employees removing ampules are thoroughly familiar with proper waste mercury handling and emergency procedures, including transfer of mercury from containment devices to appropriate containers;

(VII) Stores removed ampules in closed, non-leaking containers that are in good condition;

(VIII) Packs removed ampules in the container with packing materials adequate to prevent breakage during storage, handling, and transportation; and

(iii) A large quantity handler of universal waste mercury-containing equipment that does not contain an ampule may remove the open original housing holding the mercury from universal waste mercury-containing equipment provided the handler:

(I) Immediately seals the original housing holding the mercury with an air-tight seal to prevent the release of any mercury to the environment; and

(II) Follows all requirements for removing ampules and managing removed ampules under subpart (ii) of this part; and

(iv) (I) A large quantity handler of universal waste who removes mercury-containing ampules from mercury-containing equipment or seals mercury from mercury-containing equipment in its original housing must determine whether the following exhibit a characteristic of hazardous waste identified in paragraph (3) of Rule 1200-01-11-.02:

I. Mercury or clean-up residues resulting from spills or leaks; and/or

II. Other solid waste generated as a result of the removal of mercury-containing ampules or housings (e.g., remaining mercury-containing devices).

(II) If the mercury, residues, and/or other solid waste exhibit a characteristic of hazardous waste, it must be managed in compliance with all applicable requirements of Rules 1200-01-11-.01 through .10. The handler is considered the generator of the mercury, residues, and/or other waste and is subject to Rule 1200-01-11-.03.

(III) If the mercury, residues, and/or other solid waste is not hazardous, the handler may manage the waste in any way that is in compliance with applicable federal, state or local solid waste regulations.

4. Universal Waste - Lamps.

(i) A large quantity handler of universal waste must manage lamps in a way that prevents releases of any universal waste or component of a universal waste to the environment as follows:

(I) A large quantity handler of universal waste must contain any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps. Such containers and packages must remain closed and must lack evidence of leakage, spillage or damage that could cause leakage under reasonably foreseeable conditions.

(II) A large quantity handler of universal waste must immediately clean up and place in a container any lamp that is broken and must place in a container any lamp that shows evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous constituents to the environment. Containers must be closed, structurally sound, compatible with the contents of the lamps and must lack evidence of leakage, spillage or damage that could cause leakage or releases of mercury or other hazardous constituents to the environment under reasonably foreseeable conditions.

(ii) Large quantity handlers of universal waste lamps may treat the lamps for volume reduction at the site where they were generated under the provisions of Rule 1200-01-11-.12(8) and under the following conditions:

(I) The lamps must be crushed in a system designed and operated to minimize the loss of mercury or other hazardous constitutents to the atmosphere. Any air exhausted from the unit shall pass through a well-maintained high efficiency particulate air filter (HEPA) designed to minimize such loss. Detailed records regarding this operation must be kept and made available for review for at least three (3) years, including, but not limited to, the technology employed for crushing, including any certification or testing data provided by the manufacturer of the crushing unit;

(II) The handler immediately transfers any material recovered from a spill or leak to a container that meets the requirements of Rule 1200-01-11-.03(4)(e), and has available equipment necessary to comply with this requirement;

(III) The handler ensures that the area in which the lamps are crushed is well-ventilated and monitored to ensure compliance with applicable Occupational Safety and Health Administration (OSHA) exposure levels for mercury or other hazardous constituents;

(IV) The handler ensures that employees crushing lamps are thoroughly familiar with proper waste mercury or other hazardous constituents handling and emergency procedures, including transfer of mercury or other hazardous constituents from containment devices to appropriate containers; and

(V) The crushed lamps are stored in closed, non-leaking containers that are in good condition (e.g., no severe rusting, apparent

structural defects or deterioration), suitable to prevent releases during storage, handling and transportation.

(e) Labeling/Marking [40 CFR 273.34]

A large quantity handler of universal waste must label or mark the universal waste to identify the type of universal waste as specified below:

1. Universal waste batteries (i.e., each battery), or a container or tank in which the batteries are contained, must be labeled or marked clearly with any one of the following phrases: "Universal Waste - Battery(ies)," or "Waste Battery(ies)," or "Used Battery(ies);"

2. A container (or multiple container package unit), tank, transport vehicle or vessel in which recalled universal waste pesticides as described in subpart (1)(e)1(i) of this Rule are contained must be labeled or marked clearly with:

   (i) The label that was on or accompanied the product as sold or distributed; and

   (ii) The words "Universal Waste - Pesticide(s)" or "Waste - Pesticide(s);"

3. A container, tank, or transport vehicle or vessel in which unused pesticide products as described in subpart (1)(e)1(ii) of this Rule are contained must be labeled or marked clearly with:

   (i) (I) The label that was on the product when purchased, if still legible;

   (II) If using the labels described in item (I) of this subpart, the appropriate label as required under the Department of Transportation regulation 49 CFR part 172;

   (III) If using the labels described in items (I) and (II) of this subpart is not feasible, another label prescribed or designated by the pesticide collection program; and

   (ii) The words "Universal Waste - Pesticide(s)" or "Waste Pesticide(s)."

4. (i) Mercury-containing equipment (i.e., each device), or a container in which the equipment is contained, must be labeled or marked clearly with any of the following phrases: “Universal Waste-- Mercury Containing Equipment,” “Waste Mercury-Containing Equipment,” or “Used Mercury-Containing Equipment.”

   (ii) A universal waste mercury-containing thermostat or container containing only universal waste mercury-containing thermostats may be labeled or marked clearly with any of the following phrases: “Universal Waste – Mercury Thermostat(s),” “Waste Mercury Thermostat(s),” or “Used Mercury Thermostat(s).”

5. Universal waste lamps (i.e., each lamp), or a container or package in which such lamps are contained must be labeled or marked clearly with any one of the following phrases: “Universal Waste - Lamp(s)”, or “ Waste Lamp(s)”, or “Used Lamp(s)”.

(f) Accumulation Time Limits [40 CFR 273.35]

1. A large quantity handler of universal waste may accumulate universal waste for no longer than one year from the date the universal waste is generated, or received from another handler, unless the requirements of part 2 of this subparagraph are met.

2. A large quantity handler of universal waste may accumulate universal waste for longer than one year from the date the universal waste is generated, or received from another handler, if such activity is solely for the purpose of accumulation of such quantities of universal waste as necessary to facilitate proper recovery, treatment, or disposal. However, the handler bears the burden of proving that such activity was solely for the purpose of accumulation of such quantities of universal waste as necessary to facilitate proper recovery, treatment, or disposal.

3. A large quantity handler of universal waste must be able to demonstrate the length of time that the universal waste has been accumulated from the date it becomes a waste or is received. The handler may make this demonstration by:

   (i) Placing the universal waste in a container and marking or labeling the container with the earliest date that any universal waste in the container became a waste or was received;

   (ii) Marking or labeling the individual item of universal waste (e.g., each battery or thermostat) with the date it became a waste or was received;

   (iii) Maintaining an inventory system on-site that identifies the date the universal waste being accumulated became a waste or was received;

   (iv) Maintaining an inventory system on-site that identifies the earliest date that any universal waste in a group of universal waste items or a group of containers of universal waste became a waste or was received;

   (v) Placing the universal waste in a specific accumulation area and identifying the earliest date that any universal waste in the area became a waste or was received; or

   (vi) Any other method which clearly demonstrates the length of time that the universal waste has been accumulated from the date it becomes a waste or is received.

(g) Employee Training [40 CFR 273.36]

A large quantity handler of universal waste must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures, relative to their responsibilities during normal facility operations and emergencies.

(h) Response to Releases [40 CFR 273.37]

1. A large quantity handler of universal waste must immediately contain all releases of universal wastes and other residues from universal wastes.

2. A large quantity handler of universal waste must determine whether any material resulting from the release is hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable requirements of Rules 1200-01-11-.01 through .10. The handler is considered the generator of the material resulting from the release, and is subject to Rule 1200-01-11-.03.

(i) Off-site Shipments [40 CFR 273.38]

1. A large quantity handler of universal waste is prohibited from sending or taking universal waste to a place other than another universal waste handler, a destination facility, or a foreign destination.

2. If a large quantity handler of universal waste self-transports universal waste off-site, the handler becomes a universal waste transporter for those self-transportation activities and must comply with the transporter requirements of paragraph (4) of this Rule while transporting the universal waste.

3. If a universal waste being offered for off-site transportation meets the definition of hazardous materials under 49 CFR 171 -180, a large quantity handler of universal waste must package, label, mark and placard the shipment, and prepare the proper shipping papers in accordance with the applicable Department of Transportation regulations under 49 CFR parts 172 - 180.

4. Prior to sending a shipment of universal waste to another universal waste handler, the originating handler must ensure that the receiving handler agrees to receive the shipment.

5. If a large quantity handler of universal waste sends a shipment of universal waste to another handler or to a destination facility and the shipment is rejected by the receiving handler or destination facility, the originating handler must either:

   (i) Receive the waste back when notified that the shipment has been rejected, or

   (ii) Agree with the receiving handler on a destination facility to which the shipment will be sent.

6. A large quantity handler of universal waste may reject a shipment containing universal waste, or a portion of a shipment containing universal waste that he has received from another handler. If a handler rejects a shipment or a portion of a shipment, he must contact the originating handler to notify him of the rejection and to discuss reshipment of the load. The handler must:

   (i) Send the shipment back to the originating handler, or

   (ii) If agreed to by both the originating and receiving handler, send the shipment to a destination facility.

7. If a large quantity handler of universal waste receives a shipment containing hazardous waste that is not a universal waste, the handler must immediately notify the Commissioner of the illegal shipment, and provide the name, address, and phone number of the originating shipper. The Commissioner will provide instructions for managing the hazardous waste.

8. If a large quantity handler of universal waste receives a shipment of non-hazardous, non-universal waste, the handler may manage the waste in any way that is in compliance with applicable federal, state or local solid waste regulations.

(j) Tracking Universal Waste Shipments [40 CFR 273.39]

1. Receipt of Shipments

A large quantity handler of universal waste must keep a record of each shipment of universal waste received at the facility. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The record for each shipment of universal waste received must include the following information:

(i) The name and address of the originating universal waste handler or foreign shipper from whom the universal waste was sent; (Pesticide collection programs operated under the authority of the Tennessee Department of Agriculture are exempt from the requirements of this subpart provided that the pesticides are received by a universal waste handler for proper management);

(ii) The quantity of each type of universal waste received (e.g., batteries, pesticides, thermostats, lamps);

(iii) The date of receipt of the shipment of universal waste.

2. Shipments Off-site

A large quantity handler of universal waste must keep a record of each shipment of universal waste sent from the handler to other facilities. The record may take the form of a log, invoice, manifest, bill of lading or other shipping document. The record for each shipment of universal waste sent must include the following information:

(i) The name and address of the universal waste handler, destination facility, or foreign destination to whom the universal waste was sent;

(ii) The quantity of each type of universal waste sent (e.g., batteries, pesticides, thermostats, lamps);

(iii) The date the shipment of universal waste left the facility.

3. Record Retention

(i) A large quantity handler of universal waste must retain the records described in part 1 of this subparagraph for at least three years from the date of receipt of a shipment of universal waste.

(ii) A large quantity handler of universal waste must retain the records described in part 2 of this subparagraph for at least three years from the date a shipment of universal waste left the facility.

(iii) An organization with multiple locations may retain their universal waste records at an in-state consolidation point acceptable to the Division. If a site inspection of the records by the Division is not feasible due to the use of a records consolidation point, a copy of the site's universal waste records shall be sent, within seven working days of the request, to the Division.

(k) Exports [40 CFR 273.40]

A large quantity handler of universal waste who sends universal waste to a foreign destination must:

(Note: See 40 CFR 273.40 for additional EPA requirements.)

1. Comply with the requirements applicable to a primary exporter in Rule 1200-01-11-.03(6)(d), (6)(g)1(i) through (iv),(vi), (g)2 and (6)(h);

2. Export such universal waste only upon consent of the receiving country and in conformance with the EPA Acknowledgment of Consent as defined in Rule 1200-01-11-.03(6); and

3. Provide a copy of the EPA Acknowledgment of Consent for the shipment to the transporter transporting the shipment for export.

(4) Standards for Universal Waste Transporters [40 CFR 273 Subpart D]

(a) Applicability [40 CFR 273.50]

This subpart applies to universal waste transporters (as defined in subparagraph (1)(b) of this Rule).

(b) Prohibitions [40 CFR 273.51]

A universal waste transporter is:

1. Prohibited from disposing of universal waste; and

2. Prohibited from diluting or treating universal waste, except by responding to releases as provided in subparagraph (e) of this paragraph or by managing specific wastes as provided in Rule 1200-01-11-.07(1)(c)1(iv).

(c) Waste Management [40 CFR 273.52]

1. A universal waste transporter must comply with all applicable U.S. Department of Transportation regulations in 49 CFR part 171 through 180 for transport of any universal waste that meets the definition of hazardous material in 49 CFR 171.8. For purposes of the Department of Transportation regulations, a material is considered a hazardous waste if it is subject to the Hazardous Waste Manifest requirements of the Department specified in Rule 1200-01-11-.03. Because universal waste does not require a hazardous waste manifest, it is not considered hazardous waste under the Department of Transportation regulations.

2. Some universal waste materials are regulated by the Department of Transportation as hazardous materials because they meet the criteria for one or more hazard classes specified in 49 CFR 173.2. As universal waste shipments do not require a manifest under Rule 1200-01-11-.03, they may not be described by the DOT proper shipping name "hazardous waste, (l) or (s), n.o.s.", nor may the hazardous material's proper shipping name be modified by adding the word "waste".

(d) Storage Time Limits [40 CFR 273.53]

1. A universal waste transporter may only store the universal waste at a universal waste transfer facility for ten days or less.

2. If a universal waste transporter stores universal waste for more than ten days, the transporter becomes a universal waste handler and must comply with the applicable requirements of paragraphs (2) or (3) of this Rule while storing the universal waste.

(e) Response to Releases [40 CFR 273.54]

1. A universal waste transporter must immediately contain all releases of universal wastes and other residues from universal wastes.

2. A universal waste transporter must determine whether any material resulting from the release is hazardous waste, and if so, it is subject to all applicable requirements of Rules 1200-01-11-.01 through .10. If the waste is determined to be a hazardous waste, the transporter is subject to Rule 1200-01-11-.03.

(f) Off-site Shipments [40 CFR 273.55]

1. A universal waste transporter is prohibited from transporting the universal waste to a place other that a universal waste handler, a destination facility, or a foreign destination.

2. If the universal waste being shipped off-site meets the Department of Transportation's definition of hazardous materials under 49 CFR 171.8, the shipment must be properly described on a shipping paper in accordance with the applicable Department of Transportation regulations under 49 CFR part 172.

(g) Exports [40 CFR 273.56]

A universal waste transporter transporting a shipment of universal waste to a foreign destination may not accept a shipment if the transporter knows the shipment does not conform to the EPA Acknowledgment of Consent. In addition the transporter must ensure that:

(Note: See 40 CFR 273.56 for additional EPA requirements.)

1. A copy of the EPA Acknowledgment of Consent accompanies the shipment; and

2. The shipment is delivered to the facility designated by the person initiating the shipment.

(5) Standards for Destination Facilities [40 CFR 273 Subpart E]

(a) Applicability [40 CFR 273.60]

1. The owner or operator of a destination facility (as defined in subparagraph (1)(b) of this Rule) is subject to all applicable requirements of Rules 1200-01-11-.05, .06, .07, .08, .09 and .10, including the notification requirement under Rule 1200-01-11-.03(2).

2. The owner or operator of a destination facility that recycles a particular universal waste without storing that universal waste before it is recycled must comply with Rule 1200-01-11-.02(1)(f)3(ii).

(b) Off-site Shipments [40 CFR 273.61]

1. The owner or operator of a destination facility is prohibited from sending or taking universal waste to a place other than a universal waste handler, another destination facility or foreign destination.

2. The owner or operator of a destination facility may reject a shipment containing universal waste, or a portion of a shipment containing universal waste. If the owner or operator of the destination facility rejects a shipment or a portion of a shipment, he must contact the shipper to notify him of the rejection and to discuss reshipment of the load. The owner or operator of the destination facility must:

   (i) Send the shipment back to the original shipper, or

   (ii) If agreed to by both the shipper and the owner or operator of the destination facility, send the shipment to another destination facility.

3. If the owner or operator of a destination facility receives a shipment containing hazardous waste that is not a universal waste, the owner or operator of the destination facility must immediately notify the Commissioner of the illegal shipment, and provide the name, address, and phone number of the shipper. The Commissioner will provide instructions for managing the hazardous waste.

4. If the owner or operator of a destination facility receives a shipment of non-hazardous, non-universal waste, the owner or operator may manage the waste in any way that is in compliance with applicable federal or state solid waste regulations.

(c) Tracking Universal Waste Shipments [40 CFR 273.62]

1. The owner or operator of a destination facility must keep a record of each shipment of universal waste received at the facility. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The record for each shipment of universal waste received must include the following information:

   (i) The name and address of the universal waste handler, destination facility, or foreign shipper from whom the universal waste was sent;

   (ii) The quantity of each type of universal waste received (e.g., batteries, pesticides, thermostats, lamps);

   (iii) The date of receipt of the shipment of universal waste.

2. The owner or operator of a destination facility must retain the records described in part 1 of this subparagraph for at least three years from the date of receipt of a shipment of universal waste.

(6) Import Requirements [40 CFR 273 Subpart F]

(a) Imports [40 CFR 273.70]

Persons managing universal waste that is imported from a foreign country into the United States are subject to the applicable requirements of this Rule, immediately after the waste enters the United States, as indicated in parts 1 through 3 of this subparagraph:

1. A universal waste transporter is subject to the universal waste transporter requirements of paragraph (4) of this Rule.

2. A universal waste handler is subject to the small or large quantity handler of universal waste requirements of paragraphs (2) or (3) of this Rule, as applicable.

3. An owner or operator of a destination facility is subject to the destination facility requirements of paragraph (5) of this Rule.

4. (Reserved) [40 CFR 273.70(d)]

(7) Petitions to Include Other Wastes under Rule 1200-01-11-.12 [40 CFR 273 Subpart G]

(a) General [40 CFR 273.80]

1. Any person seeking to add a hazardous waste or a category of hazardous waste to this Rule may petition for a regulatory amendment under this paragraph and Rules 1200-01-11-.01(3)(a) and (d).

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 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 Rule 1200-01-11-.01(3)(a)2. The petition should also address as many of the factors listed in subparagraph (b) of this paragraph as are appropriate for the waste or waste category addressed in the petition.

3. The Commissioner will evaluate petitions using the factors listed in subparagraph (b) of this paragraph. The Commissioner will grant or deny a petition using the factors listed in subparagraph (b) of this paragraph. The decision will be based on the weight of evidence showing that regulation under Rule 1200-01-11-.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.

(b) Factors for Petitions to Include Other Wastes under Rule 1200-01-11-.12 [40 CFR 273.81]

1. The waste or category of waste, as generated by a wide variety of generators, is listed in Rule 1200-01-11-.02(4), or (if not listed) a proportion of the waste stream exhibits one or more characteristics of hazardous waste identified in Rule 1200-01-11-.02(3). (When a characteristic waste is added to the universal waste regulations of Rules 1200-01-11-.12 by using a generic name to identify the waste category (e.g., batteries), the definition of universal waste in Rules 1200-01-11-.01(2)(a) and Rule 1200-01-11-.12(1)(b) will be amended to include only the hazardous waste portion of the waste category (e.g., hazardous waste batteries). Thus, only the portion of the waste stream that does exhibit one or more characteristics (i.e., is hazardous waste) is subject to the universal waste regulations of Rule 1200-01-11-.12;

2. The waste or category of waste is not exclusive to a specific industry or group of industries, is commonly generated by a wide variety of types of establishments (including, for example, households, retail and commercial businesses, office

complexes, conditionally exempt small quantity generators, small businesses, government organizations, as well as large industrial facilities);

3. The waste or category of waste is generated by a large number of generators (e.g., more than 1,000 nationally) and is frequently generated in relatively small quantities by each generator;

4. Systems to be used for collecting the waste or category of waste (including packaging, marking, and labeling practices) would ensure close stewardship of the waste;

5. The risk posed by the waste or category of waste during accumulation and transport is relatively low compared to other hazardous wastes, and specific management standards proposed or referenced by the petitioner (e.g., waste management requirements appropriate to be added to subparagraphs (2)(d), (3)(d) and (4)(c) of this Rule; and/or applicable Department of Transportation requirements) would be protective of human health and the environment during accumulation and transport;

6. Regulation of the waste or category of waste under Rule 1200-01-11-.12 will increase the likelihood that the waste will be diverted from non-hazardous waste management systems (e.g, the municipal waste stream, non-hazardous industrial or commercial waste stream, municipal sewer or stormwater systems) to recycling, treatment, or disposal in compliance with the Act;

7. Regulation of the waste or category of waste under Rule 1200-01-11-.12 will improve implementation of and compliance with the hazardous waste regulatory program; and/or

8. Such other factors as may be appropriate.

(8) Standards for the Owner or Operator of a “Universal Waste Lamp Crusher System”

(a) Applicability

This paragraph applies to handlers of universal waste lamps (defined in Rule 1200-01-11-.12(1)(b)) operating a “crusher system” for the purpose of volume reduction.

(b) Prohibitions

A crusher of universal waste lamps is:

1. Prohibited from disposing of universal waste; and

2. Prohibited from diluting or treating universal waste, except by crushing for volume reduction purposes in compliance with the Permit-by-rule requirement of Rule 1200-01-11-.07(1)(c)1(iv) or as otherwise provided in Rule 1200-01-11-.12.

(c) Labeling/Marking

A handler of universal waste lamps and crushing device must label or mark the universal waste lamps or containers as specified below:

1. Universal waste lamps (i.e., each lamp), or a container in which the lamps or crushed lamps are contained, must be labeled or marked clearly with any one of

the following phrases: “Universal Waste - Lamp(s)”, or “Waste Lamp(s)”, or “Used Mercury Lamp(s), or placing “Crushed”, as appropriate, first on the label.

(d) Accumulation Time Limits

1. A handler of universal waste lamps and crusher operator may accumulate such universal waste for no longer than one year from the date it is generated, or received from another handler.

2. A handler of universal waste mercury-containing lamps who accumulates them must be able to demonstrate the length of time they have been accumulated from the date the lamps becomes a waste or are received. The handler may make this demonstration by:

(i) Placing the lamps in a container and marking or labeling the container with the earliest date that any universal waste in the container became a waste or was received;

(ii) Maintaining an inventory system available for review that identifies the date each shipment of universal waste lamps became a waste or was received, the date it was sent for recycling, and the name and address of the destination facility or handler.

(e) Employee Training

A handler of universal waste lamps must inform all employees who handle or have responsibility for managing them. The information must describe proper handling and emergency procedures.

(f) Response to Releases

1. A handler of universal waste lamps must immediately contain all releases and other residues.

2. A handler of universal waste lamps must determine whether any material resulting from the release is hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable requirements of Rules 1200-01-11-.01 through .10. The handler is considered the generator of the material resulting from the release, and must manage it in compliance with Rule 1200-01-11-.03.

(g) Off-site Shipments

1. A handler of universal waste lamps is prohibited from sending or taking such waste to a place other than another universal waste handler or a destination facility.

2. If a handler of universal waste lamps self-transports such waste off-site, the handler becomes a universal waste transporter for those self-transportation activities and must comply with the transporter requirements of paragraph (4) of this Rule while transporting the universal waste.

3. If a universal waste being offered for off-site transportation meets the definition of hazardous materials under 49 CFR 171 -180, a small quantity handler of universal waste must package, label, mark and placard the shipment, and prepare the

proper shipping papers in accordance with the applicable Department of Transportation regulations under 49 CFR parts 172 - 180.

4. If a handler of universal waste lamps sends a shipment of such waste to another handler or to a destination facility and the shipment is rejected by the receiving handler or destination facility, the originating handler must either:

   (i) Receive the waste back when notified that the shipment has been rejected, or

   (ii) Agree with the receiving handler on a destination facility to which the shipment will be sent.

Authority: T.C.A. §§4-5-202 and 68-212-101 et seq.

The rulemaking hearing rules set out herein were properly filed in the Department of State on the 18th day of March, 2008 and will become effective on the 1st day of June, 2008. (FS 03-08-08; DBID 2844)

Economic Impact Statement

The 1,383 page rulemaking includes multiple and various additions, deletions, and modifications to Rule Chapter 1200-1-11 Hazardous Waste Management. All but two of these changes are proposed to implement in Tennessee the revisions and additions federal regulations published in Federal Registers that the U. S. Environmental Protection Agency (EPA) made primarily between September 8, 2005, and July 28, 2006, to the corresponding Federal Regulations. Therefore, in accordance with T.C.A. § 4-5-404, these proposed changes substantially codify existing federal law and the Regulatory Flexibility Act of 2007 is not applicable. However, two changes are being made to this rule chapter that result in less stringent regulation than the current rule chapter, but that are more stringent than those promulgated by the EPA. Therefore, this economic impact statement shall address the impact on affected small businesses by these two differences.

(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:

The Department's two modifications that are not included with the EPA amendments will only affect owners and operators of permitted or interim status hazardous waste treatment, storage or disposal facilities "TSDFs". Currently, there are 66 hazardous waste TSDFs, which include facilities that are not operating but are in post-closure maintenance or are under a corrective action order. Of these 66 hazardous waste TSDFs, the Department estimates that 14 may qualify as small businesses.

(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:

The Department's modifications affect owners or operators of hazardous waste TSDFs. EPA amended the federal regulations by reducing certain record retention times from "the life of the facility" to three years. The Department is proposing to modify its rules by reducing the record retention time from "the life of the facility" to five years. Requiring that the records be kept for five years coincides with the Department's inspection cycles of certain types of hazardous waste facilities. The affected owners or operators of hazardous waste TSDFs are only required to maintain records for an additional two years from EPA's amended requirement and the additional cost is believed to be minimal.

The second modification consists of designating two types of Class 2 permit modifications as Class [1]1 modifications where EPA made them a Class 1 modification. This modification would require the hazardous waste TSDF owner or operator to only implement the requested modifications to their permits after obtaining approval from the Commissioner. Prior to the regulatory amendments made by the EPA and proposed by the Department, these same types of hazardous waste permit modifications would follow the more costly Class 2 modification procedure, which would cost the owner or operator of the TSDF, a permit modification fee of $7,000. This proposed rule change results in a cost saving for hazardous waste TSDF owner or operator of $4,000. However, there remains a cost difference between a Class 1 modification and a Class [1]1 of $2,500. The Department believes this difference is justified since two types of modifications affected involve changes to the hazardous waste facility's contingency plan and to the inspection frequency for tank systems storing or treating hazardous waste. These requirements are carefully negotiated during the process of issuing the permit and become conditions of the permit. If these types of permit modifications were allowed as Class 1 modifications and not Class [1]1 the owner or operator could modify its permit without approval by the Department. The Department does not support allowing these types of modifications

without approval and maintains the need to be more stringent in order to protect public health and the environment.

(3) A statement of the probable effect on impacted small businesses and consumers:

Other than the difference in the fee amount paid by hazardous waste TSDF and the time required to review and approve the requested permit modification there is minimal impact. Likewise, the impact of retaining records at a hazardous waste permitted or interim status TSDF is also minimal. There is no impact to consumers.

(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 small businesses affected by the proposed state modifications not mandated by the federal regulations are the 14 small businesses that own or operate a hazardous waste treatment, storage and disposal facility. In order to maintain program authorization from the U. S. Environmental Protection Agency these regulations must be substantially equivalent to the corresponding federal regulations, which limits the alternative methods available. The differences addressed in this rulemaking are believed to be necessary to both maintain federal authorization and to enable the Department to protect public health and the environment when hazardous waste are being managed at treatment, storage or disposal facilities.

(5) A comparison of the proposed rule with any federal or state counterparts:

The difference between the proposed modifications and the federal amendments involves the changes described above regarding:

(a) inspection frequencies at hazardous waste permitted treatment, storage or disposal facilities; and

(b) the procedure required to be followed when the owners or operators of those permitted facilities modify their contingency plans or their hazardous waste storage or treatment tank inspection frequencies.

(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.

If the Department modified its rules in the same manner as the U.S. Environmental Protection Agency, then the impact of owners or operators of hazardous waste permitted or interim status facilities retaining their records for three years instead of five years could result in the Department not being able to inspect all of the records needed to make the inspection complete. The impact of allowing hazardous waste TSDF owners and operators to modify their contingency plans and tank inspection frequencies without prior approval could compromise the Department's ability to protect public health and the environment at these facilities.