

FISCAL NOTE FOR PROPOSED RULES

Rule Title: Hazardous Waste Management Regulations
 Type of Rule: X Legislative Interpretive Procedural
 Agency: West Virginia Department of Natural Resources
 Address: 1800 Washington Street, East, Charleston, West Virginia 25305

1. Effect of Proposed Rule (Estimate Total Cost)	Increase \$	ANNUAL		FISCAL YEAR	
		Decrease \$	Current \$	Next \$	Thereafter \$

Personal Services
 Current Expense
 Repairs and Alterations - Little or no impact
 Equipment
 Other

2. Explanation of Above Estimates:

The proposed rules will result in a minor increase in Department paperwork.

3. Objectives of These Rules:

The proposed rules will substantially improve the protection of environment and public health. Compliance with the rules will substantially decrease the corrective action costs incurred by the chemical and other affected industries.

4. Explanation of Overall Economic Impact of Proposed Rule.

A. Economic Impact on State Government:

The proposed rule should have little or no economic impact upon State government.

B. Economic Impact on Political Subdivisions; Specific Industries; Specific Groups of Citizens:

The proposed rules need to be adopted by the Department for the State Hazardous Waste Program to be consistent with the federal program in order to maintain the delegation of the program from the Environmental Protection Agency (EPA). EPA conducted an economic impact analysis of today's proposed rule when they promulgated the rules in July 1986. Their conclusion was that more than 80% of the potentially affected communities nationwide were "likely to incur annualized compliance costs that are one percent or less of their firms' net income. These costs do not represent substantial economic impacts on the affected firms." The same conclusion should hold true for the regulated community in West Virginia also. The department estimates that there

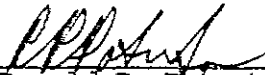
Part B - Continued

are about 90 tanks in the state used for storage of hazardous wastes which would be impacted by these rules. Using EPA's figures for worst case scenario, this would result in an annual incremental cost of about \$0.75 million dollars to the industry in terms of capital and maintenance costs.

C. Economic Impact on Citizens/Public at Large:

The proposed rule will not result in any substantial economic impact on the industry and thus will have little economic impact on the citizens at large.

Date: October 9, 1987



Ronald R. Potesta
Director

WEST VIRGINIA ADMINISTRATIVE REGULATIONS
DEPARTMENT OF NATURAL RESOURCES
SERIES 35
HAZARDOUS WASTE MANAGEMENT REGULATIONS

APR 17 1988

§47-35-1. Scope and Authority.

1.1. Scope and Purpose. -- The purpose of these regulations is to provide for the regulation of the generation, treatment, storage, and disposal of hazardous waste to the extent necessary for the protection of the public health and safety and the environment.

1.2. Authority. -- W. Va. Code §§20-5E-4, 20-5E-5, 20-5E-6, and 20-5E-7.

1.3. Effective Date. --

1.4. Filing Date. --

1.5. Incorporation by Reference. Whenever either federal statutes or regulations or State statutes or regulations are incorporated by reference into these regulations, the reference is to that statute or regulation in effect on the date of enactment of the legislation authorizing these regulations (_____, 1988).

1.6. Promulgation History. (Reserved).

§47-35-2. Definitions.

For the purposes of these regulations, the following words and phrases shall have the meanings ascribed to them in ~~this section~~ Section 2 of these regulations unless the context of the regulations indicate otherwise:

2.1. "Aboveground Tank" means a device meeting the definition of "tank" in these regulations 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.

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

2.3. "Active Portion" means that portion of a facility where treatment, storage, or disposal operations are being conducted. It includes the treated area of a landfarm and the active face of a landfill, but does not include those portions of a facility which have been closed in accordance with all applicable closure requirements.

2.4. "Administrator" means the administrator of the United States Environmental Protection Agency or his designee.

2.5. "Ancillary Equipment" means any device including, but not limited to, such devices as piping, fitting, 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 on-site, or to a point of shipment for disposal off-site.

2.6. "Application, Part A" means that part of the application which a permit applicant must complete to qualify for interim status under Section 3005(e) of RCRA or these regulations and for consideration for a permit.

2.7. "Application, Part B" means that part of the application which a permit applicant must complete to be considered for a permit.

2.8. "Approved Form" means any Environmental Protection Agency standard national form for administering the hazardous waste provisions of RCRA, or a form approved by the chief of the Division of Water Resources or the director of the Department of Natural Resources.

2.9. "Aquifer" means a geologic formation, group of formations, or part of a formation that is capable of yielding a significant amount of groundwater to wells or springs.

2.10. "Authorized Representative" means the person responsible for the overall operation of a facility or an operational unit that is part of a facility.

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

(a) 2.11.1. The unit must have physical provisions for recovering and exporting thermal energy in the form of steam, heated fluids, or heated gases; and

(b) 2.11.2. 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 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 primary energy recovery section(s). 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

(c) 2.11.3. While in operation, the unit must maintain a thermal energy recovery efficiency of at least sixty percent (60%), calculated in terms of the recovered energy compared with the thermal value of the fuel; and

(d) 2.11.4. The unit must export and utilize at least seventy-five percent (75%) 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.

2.12. "Calendar Year" means January 1 through December 31.

~~"Cell" means a discrete volume of a hazardous waste landfill which uses a liner to provide isolation of wastes from adjacent cells or wastes.~~

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

2.14. "Chief" means the chief of the Division of Water Resources of the Department of Natural Resources.

2.15. "Closed Facility" means a facility which has been properly closed in accordance with the facility closure plan and all applicable regulations and requirements.

2.16. "Closed Portion" means that portion of a facility which an owner or operator has closed in accordance with the facility closure plan and all applicable closure requirements.

2.17. "Closure" means the act of securing a hazardous waste management facility pursuant to the requirements of these regulations.

2.18. "Common Code" means the unique code assigned by the Chemical Abstract Services (also known as the CAS Registry Number) to each EPA hazardous waste and to each Department of Transportation DOT hazardous waste material.

2.19. "Component" means either the tank or the ancillary equipment of a tank system.

2.20. "Confined Aquifer" means an aquifer, overlain by a confining layer of significantly lower hydraulic conductivity, containing groundwater that is under sufficient pressure to rise above the level at which it is encountered by a well.

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

2.22. "Contingency Plan" means a document setting out an organized, planned, and coordinated course of actions to be followed in the event of a fire, explosion, or release of hazardous waste or hazardous constituents which could threaten human health or environment.

2.23. "Corrosion Expert" means a person who, by reason of his knowledge of the physical sciences and the principles of engineering and mathematics, acquired through 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.

2.24. "CWA" means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act), Public Law 92-500, as amended by Public Law 95-217 and Public Law 95-576; 33 U.S.C. §1251.

2.25. "Designated Facility" or "Designated Hazardous Waste Management Facility" means a hazardous waste treatment, storage, or disposal facility which has received a permit from the Environmental Protection Agency in accordance with 40 C.F.R. Parts 124 and 270, a permit from this State, or another authorized state hazardous waste program or which has been granted interim status or that is regulated under ~~Section 3.4.5 or 9.6~~ Section 3.1.6 or 9.6 of these regulations, and that has been designated on the manifest to receive a specific hazardous waste shipment.

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

2.27. "Director" means the director of the Department of Natural Resources.

2.28. "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 State waters.

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

2.30. "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 the waste will remain after closure.

2.31. "Division" means the Division of Water Resources of the Department of Natural Resources.

2.32. "Domestic Sewage" means untreated sanitary wastes that pass through a sewer system.

2.33. "DOT" means the United States Department of Transportation.

2.34. "Draft Permit" means a document prepared under Section 11.21 of these regulations indicating the chief's tentative decision to issue, deny, modify, revoke and reissue, revoke, or reissue a permit.

2.35. "Elementary Neutralization Unit" means a device which (a) is used for neutralizing wastes which are hazardous only because they exhibit the corrosivity characteristic defined in Section 3.3.3 of these regulations, or are listed in Section 3.4 of these regulations only for this reason; and (b) meets the definition of a tank, container, or transport vehicle as defined in these regulations.

2.36. "Emergency Permit" means a permit issued where an imminent and substantial endangerment to human health or the environment is determined to exist by the director or the chief.

2.37. "EPA" means the United States Environmental Protection Agency.

2.38. "EPA Hazardous Waste Number" means the number assigned by EPA to each hazardous waste listed in Section 3.4 of these regulations and to each characteristic identified in Section 3.3 of these regulations.

2.39. "EPA Identification Number" means the number assigned by EPA to each hazardous waste generator, hazardous waste transporter, or hazardous waste facility.

2.40. "Equivalent Method" means any testing or analytical method approved by the EPA Administrator under 40 C.F.R. §§260.20 and 260.21.

2.41. "Existing Facility" or "Existing Hazardous Waste Management Facility" means a facility which was in operation or for which construction commenced on or before July 10, 1981. Under this authority a facility has commenced construction if: (a) the owner or operator has obtained all necessary federal, State, and local approvals or permits to begin physical construction; and either (a) a continuous physical on-site construction program has begun, or (b) the owner or operator has entered into contractual obligations which cannot be cancelled or modified without substantial loss for construction of the facility to be completed within a reasonable time.

2.42. "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.

2.43. "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 either 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 (a) a continuous on-site physical construction or installation program has begun or (b) 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.

"Facility"-means-"Hazardous-Waste-Management-Facility".

2.44. "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.

2.45. "Federal, State, and Local Approvals or Permits Necessary to Begin Physical Construction" means permits and approvals required under federal, state, or local hazardous waste control statutes, regulations, or ordinances.

2.46. "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 Section 8 of these regulations and 40 C.F.R. Part 265 are no longer conducted at the facility unless subject to the provisions in Section 6.3.5 of these regulations.

2.47. "Final Cover" means cover material that is applied upon closure of a landfill and is permanently exposed at the surface.

2.48. "Flash Point" means the minimum temperature at which a liquid or solid gives off sufficient vapor to form an ignitable vapor-air mixture near the surface of the liquid or solid. An ignitable mixture is one that, when ignited, is capable of the initiation and propagation of flame away from the source of ignition. Propagation of flame means the spread of the flame from layer to layer independent of the source of ignition.

2.49. "Food Chain Crops" means tobacco, crops grown for human consumption, or crops grown for pasture, forage, or feed for animals whose products are consumed by humans.

2.50. "Foreign Source" means a source outside the geographical boundaries of the continental United States.

2.51. "Freeboard" means the vertical distance between the top of a surface impoundment, open tank, or other containment device and the surface of the waste contained therein.

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

2.53. "Generator" means any person, by site location, whose act or process produces hazardous waste identified or listed in Section 3 of these regulations or whose act first causes a hazardous waste to become subject to these regulations.

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

2.55. "Hazardous Constituent" or "Constituent" are constituents identified in Appendix VIII of these regulations or constituents that caused the director to list the hazardous waste in Section 3.4 of these regulations or constituents listed in Table II of these regulations, that are reasonably expected to be in or derived from waste contained in a regulated unit or that have been detected in groundwater in the uppermost aquifer underlying a regulated unit.

2.56. "Hazardous Waste" means a hazardous waste as defined in Section ~~3-4-2~~ Section 3.1.3 of these regulations except as Section-3-4-b Section 3.1.1.b of these regulations provides otherwise.

2.57. "Hazardous Waste Activity" means the handling of hazardous waste as in the generation, transportation, treatment, storage, or disposal of any hazardous waste.

2.58. "Hazardous Waste Generation" means the act or process of producing hazardous waste materials.

2.59. "Hazardous Waste Management" means the systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery, and disposal of hazardous wastes.

2.60. "Hazardous Waste Management Facility" or "Facility" means 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.

2.61. "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 (including its associated piping and underlying containment system), and a container storage area. A container alone does not constitute a unit; a unit includes containers and the land or pad upon which they are placed.

2.62. "Inactive Portion" means that portion of a facility which has not been in operation since the effective date of Section 3 of these regulations.

2.63. "Incinerator" means any enclosed device using controlled flame combustion that neither meets the criteria for classification as a boiler nor is listed as an industrial furnace.

2.64. "Incompatible Waste" means a hazardous waste which is unsuitable for:

(a) 2.64.1. Placement in a particular device or facility because it may cause corrosion or decay of containment materials; or

(b) 2.64.2. 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.

2.65. "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.

2.66. "Industrial Furnace" means any of the following enclosed devices that are integral components of manufacturing processes and that use controlled flame devices to accomplish recovery of materials or energy:

(1) 2.66.1. Cement kilns;

(2) 2.66.2. Lime kilns;

(3) 2.66.3. Aggregate kilns;

(4) 2.66.4. Phosphate kilns;

{5} 2.66.5. Coke ovens;

{6} 2.66.6. Blast furnaces;

{7} 2.66.7. Smelting, melting, and refining furnaces (including pyrometallurgical devices such as cupolas, reverberator furnaces, sintering machines, roasters, and foundry furnaces);

{8} 2.66.8. Titanium dioxide chloride process oxidation reactors;

{9} 2.66.9. Methane reforming furnaces;

{10} 2.66.10. Pulping liquor recovery furnaces;

{11} 2.66.11. Combustion devices used in the recovery of sulfur values from spent sulfuric acid;

{12} 2.66.12. Such other devices as the director may, after notice and comment, add to this list on the basis of one or more of the following factors:

{a} 2.66.12.a. The design and use of the device primarily to accomplish recovery of material products;

{b} 2.66.12.b. The use of the device to burn or reduce raw materials to make a material product;

{c} 2.66.12.c. 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;

{d} 2.66.12.d. The use of the device to burn or reduce secondary materials as ingredients in an industrial process to make a material product;

{e} 2.66.12.e. The use of the device in common industrial practice to produce a material product; and

{f} 2.66.12.f. Other factors, as appropriate.

2.67. "Inground Tank" means a device meeting the definition of "tank" in these regulations 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.

2.68. "Injection Well" means a well or bore hole into which fluids are injected.

2.69. "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.

2.70. "In Operation" means facilities that are treating, storing, or disposing of hazardous waste.

2.71. "Installation Inspector" means a person who, by reason of his

knowledge of the physical sciences and the principles of engineering, acquired through a professional education and related practical experience, is qualified to supervise the installation of tank systems.

2.72. "Interim Status" means the status obtained by any person who owns or operates a facility in existence, or existing on July 10, 1981, and required to have a permit under these regulations. Such facilities will be treated as having been issued a permit until such time as final administrative disposition is made with respect to an applicant for such permit provided that such facility is operating and continues to operate in compliance with interim status requirements of Section 3005 of the federal Solid Waste Disposal Act, and in such a manner as will not cause or create a substantial risk of a health hazard or public nuisance or a significant adverse effect upon the environment.

2.73. "International Shipment" means the transportation of hazardous waste, into or out of the jurisdiction of the United States.

2.74. "Landfill" means a disposal facility or part of a facility where hazardous waste is placed in or on land and which is not a land treatment facility, a surface impoundment, or an injection well.

2.75. "Landfill Cell" means-"Cell" or "Cell" means a discrete volume of a hazardous waste landfill which uses a liner to provide isolation of wastes from adjacent cells or wastes.

2.76. "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.

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

2.78. "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.

2.79. "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.

2.80. "Major Facility" means a disposal or treatment* facility which disposes or treats an amount of hazardous waste exceeding or equal to one thousand (1,000) tons during a calendar year, and any storage facility having a storage capacity for one thousand (1,000) tons of hazardous waste or more.

2.81. "Manifest" means the shipping document originated and signed by the generator, which contains the information required by Section 6.2 of these regulations.

2.82. "Manifest Document Number" means the serial number assigned to the manifest by the generator for record keeping and reporting purposes.

2.83. "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.

2.84. "Monitoring" means all procedures used to inspect and quantify the chemical or physical characteristics of the air, State waters, or soils.

2.85. "Movement" means transportation of hazardous waste to a facility in an individual transportation vehicle.

2.86. "New Facility" or "New Hazardous Waste Management Facility" means a facility which began operation, or for which construction commenced after July 10, 1981.

2.87. "New Tank Component" or "New Tank System" 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 Section 8.8.4.g.2 of these regulations, a new tank system is one for which construction commences after July 14, 1986. (See also "existing tank system.")

2.88. "Not In Service" means a regulated unit that has ceased receiving hazardous waste and has been emptied to the point that portions of the liner(s) are exposed below the normal operating level.

2.89. "NPDES (National Pollutant Discharge Elimination System)" means the national program for issuing, modifying, revoking, reissuing, terminating, monitoring, and enforcing permits and imposing and enforcing pretreatment requirements pursuant to CWA Sections 307, 402, 318, and 405. The term includes any approved State program.

2.90. "Onground Tank" means a device meeting the definition of "tank" in these regulations 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.

2.91. "On-Site" means on the same or geographically contiguous property which may be divided by public or private rights-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 rights-of-way. Noncontiguous properties owned by the same person but connected by a right-of-way which the person controls and to which the public does not have access, is also considered on-site property.

2.92. "Operator" means the person responsible for the overall operation of a hazardous waste management facility.

2.93. "Owner" means the person who owns a hazardous waste management

facility or part of a hazardous waste management facility.

2.94. "Packaging" means the assembly of one or more containers and any other components necessary to assure compliance with the minimum packaging requirements under 49 C.F.R. Parts 173, 178, and 179 and includes containers (other than freight containers or overpacks), portable tanks, cargo tanks, tank cars and multi-unit tank car units.

2.95. "Partial Closure" means the closure of a hazardous waste management unit in accordance with the applicable closure requirements of Section 8 of these regulations and 40 C.F.R. Part 265 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 system), a landfill cell, a surface impoundment, a waste pile, or other hazardous waste management unit while other units of the same facility continue to operate.

2.96. "Permit" means a control document issued by this state pursuant to the State Act and these regulations, or by other states having an authorized program pursuant to Section 3006 of RCRA or by the EPA Administrator pursuant to applicable federal regulations, or a facility having "interim status."

2.97. "Permit By Rule" means the provision of these regulations stating that a "facility or activity" is deemed to have a permit if it meets the requirements of such provision.

2.98. "Permitted Facility" or "Permitted Hazardous Waste Management Facility" means a hazardous waste treatment, storage, or disposal facility that has received an EPA RCRA permit, a RCRA permit from an authorized state pursuant to Section 3006 of RCRA, or a State permit in accordance with the requirements of these regulations, or a facility having "interim status."

2.99. "Person" means an individual, trust, firm, joint stock company, public, private or government corporation, partnership, association, State or federal agency, the United States government, this State or any other State, municipality, county commission, or any other political subdivision of a State or any interstate body.

2.100. "Personnel" or "Facility Personnel" means all persons who work at or oversee the operations of a hazardous waste management facility, and whose actions or failure to act may result in noncompliance with the requirements of these regulations.

2.101. "Physical Construction" or "Construct" means excavation, movement of earth, erection of forms or structures, or similar activity involving the actual preparation of a hazardous waste management facility.

2.102. "Pile" means any noncontainerized accumulation of solid, non-flowing hazardous waste that is used for treatment or storage.

2.103. "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.

2.104. "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 a State or municipality as defined by CWA Section 502(4). This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

2.105. "RCRA" means Subtitle C, the Resource Conservation and Recovery Act, as amended by the federal Solid Waste Disposal Act, as amended.

2.106. "Representative Sample" means a sample of a universe or whole which can be expected to exhibit the average properties of the universe or whole.

2.107. "Retrofitting" means the act of installing or upgrading a regulated unit with liners, leachate collection, detection, and removal systems not installed at the time of original construction.

2.108. "Revocation" -- when the term is used in Section 11 of these regulations in the context of a permit action -- means an action which renders a permit permanently null and void.

2.109. "Runoff" means any rainwater, leachate, or other liquid that drains over land from any part of a facility.

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

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

2.112. "SDWA" means the federal Safe Drinking Water Act (Public Law 95-523, as amended by Public Law 95-1900);

2.113. "SIC" means Standard Industrial Classification.

2.114. "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.

2.115. "Small Quantity Generator" means a generator who generates less than one thousand (1,000) kilograms of hazardous wastes in a calendar month.

2.116. "State Act" means the Hazardous Waste Management Act, W. Va. Code §20-5E et seq.

2.117. "State Waters" or "Waters" means any and all water on or beneath the surface of the ground, whether percolating, standing, diffused, or flowing wholly or partially within this State, or bordering this State and within its jurisdiction, and shall include, without limiting the generality of the foregoing, natural or artificial lakes, rivers,

streams, creeks, branches, brooks, ponds (except farm ponds, industrial settling basins and ponds, and water treatment facilities), impounding reservoirs, springs, wells, watercourses, and wetlands.

2.118. "Storage" means the holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere.

2.119. "Storm" means the 5-year, 24-hour rainfall event for a particular location as it relates to the inspection requirements specified in Sections 8.9.5, 8.10.5 and 8.11.3 of these regulations; "storm" for the purposes specified in the design requirements of Sections 8.9.2, 8.10.2, and 8.11.2 of these regulations shall mean a 25-year, 24-hour rainfall event for a particular location. Both definitions are as defined by the National Weather Service in Technical Paper #40, "Rainfall Frequency Atlas of the United States," May 1961, and subsequent amendments thereto or equivalent region or State rainfall probability information developed therefrom.

2.120. "Sump" means any pit or reservoir that meets the definition of "tank" in these regulations that serves to collect hazardous waste for transport to hazardous waste storage, treatment, or disposal facilities. The term "sump" includes troughs or trenches connected to the pit or reservoir.

2.121. "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.

2.122. "Suspension" -- when used in Section 11 of these regulations in the context of a permit action -- means an action which renders a permit temporarily null and void until such time as the chief reinstates, modifies, revokes, or revokes and reissues the permit in accordance with the applicable provisions of Section 11 of these regulations.

2.123. "SW-846" means "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, (Second Edition, 1982, as amended by Update I of April 1984 and Update II of April 1985), U.S. Environmental Protection Agency, Office of Solid Waste, Washington, DC. Copies of this document may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

2.124. "Tank" means a stationary device designed to contain an accumulation of hazardous waste which is constructed primarily of non-earthen materials which provide structural support.

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

2.126. "Termination" -- when the term is used in Section 11 of these

regulations in the context of a permit action -- means the same as the term "revocation".

2.127. "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 release of any hazardous waste or any constituent thereof into the environment during treatment.

2.128. "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.

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

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

2.131. "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.

2.132. "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 render such waste nonhazardous, safer to transport, store, or dispose of, or amenable to recovery, amenable for storage or reduced in volume. Such term includes any activity or processing designed to change the physical form or chemical composition of hazardous waste as to render it nonhazardous.

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

2.134. "Triple Rinsed" means containers which have been flushed three (3) times, each time using a volume of ~~dilutant~~ diluent at least equal to ten percent (10%) of the container's capacity.

2.135. "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").

2.136. "Underground Tank" means a device meeting the definition of "tank" in these regulations whose entire surface area is totally below the surface of and covered by the ground.

2.137. "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.

2.138. "Unsaturated Zone" or "Zone of Aeration" means the zone between topographic surface and the water table.

2.139. "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.

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

2.141. "Waste" means waste as defined in ~~Section 3.1.2~~ Section 3.1.2 of these regulations.

2.142. "Wastewater Treatment Unit" means a device which:

(a) 2.142.1. Is part of a wastewater treatment facility which is subject to regulation under the CWA;

(b) 2.142.2. Receives and treats or stores an influent wastewater which is a hazardous waste as defined in these regulations, or generates and accumulates, or treats or stores a wastewater treatment sludge that is defined as a hazardous waste; and

(c) 2.142.3. Meets the definition of a tank as defined in ~~this--section~~ Section 2 of these regulations.

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

2.144. "Water Table" means the upper surface of the zone of saturation in groundwaters in which the hydrostatic pressure is equal to atmospheric pressure.

2.145. "Well" means any shaft or pit dug, drilled, jetted, driven, or bored into the earth, generally of a cylindrical form, and often cased with bricks or tubing to prevent the earth from caving in, whose depth is greater than the largest surface dimension.

2.146. "Zone of Engineering Control" means an area under the control of the owner or 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 groundwater or surface water.

§47-35-3. Identification and Listing of Hazardous Waste.

3.1. Identification of Wastes.

~~3-4-~~ 3.1.1. Purpose and Scope.

~~3-4-a-~~ This---section 3.1.1.a. Section 3.1 of these regulations identifies those wastes which are subject to regulation as hazardous wastes.

~~3-4-b-~~ 3.1.1.b. The definition of waste contained in ~~this--section~~ Section 3.1.2 of these regulations applies only to wastes that are also hazardous for purposes of the State Act and the regulations implementing the State Act. For example, it does not apply to materials such as nonhazardous scrap, paper, textiles, or rubber that

are not otherwise hazardous wastes and that are recycled.

~~3-4-b-1-~~ This section 3.1.1.b.1. Section 3.1 of these regulations identifies only some of the materials which are wastes and hazardous wastes under Sections 5, 12, 13, and 17 of the State Act. A material which is not defined as a waste in this section Section 3.1.2 of these regulations, or is not a hazardous waste identified or listed in this section Section 3.4 of these regulations, is still a waste and a hazardous waste for purposes of these sections if:

~~3-4-b-2-~~ 3.1.1.b.2. In the case of Sections 12 and 13 of the State Act, the director has reason to believe the material may be a waste within the meaning of Section 3(12) of the State Act and a hazardous waste within the meaning of Section 3(6) of the State Act; or.

~~3-4-b-3-~~ 3.1.1.b.3. In the case of Section 17 of the State Act, the statutory elements are established.

~~3-4-e-~~ For the purposes of Sections 3.1.1 and 3.1.5 of these regulations:

3.1.1.c. For the purposes of Sections 3.1.2 and 3.1.6 of these regulations:

~~3-4-e-1-~~ 3.1.1.c.1. 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.

~~3-4-e-2-~~ 3.1.1.c.2. "Sludge" has the same meaning used in Section 2 of these regulations.

~~3-4-e-3-~~ 3.1.1.c.3. 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.

~~3-4-e-4-~~ 3.1.1.c.4. 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.

~~3-4-e-5-~~ 3.1.1.c.5. A material is "used or reused" if it is either:

~~3-4-e-5-A-~~ 3.1.1.c.5.A. Employed as an ingredient (including use as an intermediate) in an industrial process to make a product, such as distillation bottoms from one process used as feedstock for 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

~~3-4-e-5-B-~~ 3.1.1.c.5.B. Employed in a particular function or application as an effective substitute for a commercial product, such as spent pickle liquor used as phosphorus precipitant and sludge conditioner in wastewater treatment.

~~3-4-e-6-~~ 3.1.1.c.6. "Scrap metal" is bits and pieces of metal parts such as bars, turnings, rods, sheets, wire, or metal pieces that may be combined together with bolts or soldering which when worn or superfluous can be recycled.

~~3-4-e-7-~~ 3.1.1.c.7. A material is "recycled" if it is used, reused, or reclaimed.

~~3-4-e-8-~~ 3.1.1.c.8. 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 the amount of material that is recycled or transferred to a different site for recycling equals at least seventy-five percent (75%) by weight or volume of the amount of that material accumulated at the beginning of the period. In calculating the percentage of turnover, the seventy-five percent (75%) requirement is to be applied to each material of the same type, such as slags from a single smelting process, that is recycled in the same way (that is, 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 ~~Section--3-4-3-e~~ Section 3.1.4.c of these regulations are not to be included in making the calculation. Materials that are already defined as 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.

~~3-4-4-~~ 3.1.2. Definitions of Waste.

~~3-4-4-a-4-~~ 3.1.2.a. A waste is any discarded material that is not excluded by ~~Section--3-4-3-a~~ Section 3.1.4.a of these regulations or that is not excluded by variance granted under Section 16.3 of these regulations.

~~3-4-4-a-2-~~ 3.1.2.a.1. A discarded material is any material which is:

~~3-4-4-a-2-i-~~ 3.1.2.a.1.A. Abandoned, as explained in ~~Section--3-4-4-b~~ Section 3.1.2.b of these regulations; or

~~3-4-4-a-2-ii-~~ 3.1.2.a.1.B. Recycled, as explained in ~~Section--3-4-4-e~~ Section 3.1.2.c of these regulations; or

~~3-4-4-a-2-iii-~~ 3.1.2.a.1.C. Considered inherently waste-like, as explained in ~~Section--3-4-4-d~~ Section 3.1.2.d of these regulations.

~~3-4-4-b-~~ 3.1.2.b. Materials are waste if they are abandoned by being:

~~3-4-4-b-1-~~ 3.1.2.b.1. Disposed of; or

~~3-4-4-b-2-~~ 3.1.2.b.2. Burned or incinerated; or

~~3-4-4-b-3-~~ 3.1.2.b.3. Accumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned, or incinerated.

~~3-4-4-e-~~ 3.1.2.c. Materials are waste if they are recycled, or accumulated, stored, or treated before recycling, as specified in

~~Sections 3.1.1.e.1 through 3.1.1.e.4~~ Sections 3.1.2.c.1 through 3.1.2.c.4 of these regulations.

~~3.1.1.e.1~~ 3.1.2.c.1. Used in a manner constituting disposal.

~~3.1.1.e.1-i~~ 3.1.2.c.1.A. Materials noted with a "*" in Column 1 of Table I of these regulations are wastes when they are:

~~3.1.1.e.1-i-A~~ 3.1.2.c.1.A.i. Applied to or placed on the land in a manner that constitutes disposal; or

~~3.1.1.e.1-i-B~~ 3.1.2.c.1.A.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 waste.

~~3.1.1.e.1-i-C~~ 3.1.2.c.1.A.iii. However, commercial chemical products listed in Section 3.4.4 of these regulations are not wastes if they are applied to the land and that is their ordinary manner of use.

~~3.1.1.e.2~~ 3.1.2.c.2. Burning for energy recovery.

~~3.1.1.e.2-i~~ 3.1.2.c.2.A. Materials noted with a "*" in Column 2 of Table I of these regulations are wastes when they are:

~~3.1.1.e.2-i-A~~ 3.1.2.c.2.A.i. Burned to recover energy.

~~3.1.1.e.2-i-B~~ 3.1.2.c.2.A.ii. Used to produce a fuel or are otherwise contained in fuels (in which case the fuel itself remains a waste).

~~3.1.1.e.2-ii~~ 3.1.2.c.2.B. However, commercial chemical products listed in Section 3.4.4 of these regulations are not wastes if they are themselves fuels.

~~3.1.1.e.3~~ 3.1.2.c.3. Reclaimed. Materials noted with a "*" in Column 3 of Table I of these regulations are wastes when reclaimed.

~~3.1.1.e.4~~ 3.1.2.c.4. Accumulated speculatively. Materials noted with a "*" in Column 4 of Table I of these regulations are wastes when accumulated speculatively.

TABLE I

Potential Waste Materials

	Use constituting disposal (1)	Energy recovery/ fuel (2)	Reclamation (3)	Speculative accumulation (4)
Spent materials	*	*	*	*
Sludges listed in Sections 3.4.2 and 3.4.3	*	*	*	*
Sludges exhibiting a characteristic of hazardous waste	*	*		*
By-products listed in Section 3.4.2 and 3.4.3	*	*	*	*
By-products exhibiting a characteristic of hazardous waste	*	*		*
Commercial chemical products listed in Section 3.4.4	*	*		
Scrap metal	*	*	*	*

NOTE: The terms "spent materials", "sludges", "by-products", and "scrap metal" are defined in ~~Section 3.4.4~~ Section 3.1.1.c of these regulations.

~~3-1-1-d~~ 3.1.2.d. Inherently waste-like materials. The following materials are wastes when they are recycled in any manner:

~~3-1-1-d-1~~ 3.1.2.d.1. (Reserved).

~~3-1-1-d-2~~ 3.1.2.d.2. The director will use the following criteria to add wastes to the list in ~~Section-3-1-1-d-1~~ Section 3.1.1.d.1 of these regulations:

~~3-1-1-d-2-i-A~~ 3.1.2.d.2.A.i. The materials are ordinarily disposed, burned, or incinerated; or

~~3-1-1-d-2-i-B~~ 3.1.2.d.2.A.ii. The materials contain toxic constituents listed in Appendix VIII of these regulations. 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

~~3-1-1-d-2-iii~~ 3.1.2.d.2.B. The material may pose a substantial hazard to human health and the environment when recycled.

~~3-1-1-e~~ 3.1.2.e. Materials that are not waste when recycled.

~~3-1-1-e-1~~ 3.1.2.e.1. Materials are not wastes when they can be shown to be recycled by being:

~~3-1-1-e-1-i~~ 3.1.2.e.1.A. Used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed; or

~~3-1-1-e-1-ii~~ 3.1.2.e.1.B. Used or reused as effective substitutes for commercial products; or

~~3-1-1-e-1-iii~~ 3.1.2.e.1.C. Returned to the original process from which they are generated, without first being reclaimed. The material must be returned as a substitute for raw material feedstock, and the process must use raw materials as principal feedstocks.

~~3-1-1-e-2~~ 3.1.2.e.2. The following materials are wastes, even if the recycling involves use, reuse or return to the original process (described in ~~Sections--3-1-1-e-1-i--through--3-1-1-e-1-iii~~ Sections 3.1.2.e.1.A through 3.1.2.e.1.C of these regulations:

~~3-1-1-e-2-i~~ 3.1.2.e.2.A. Materials used in a manner constituting disposal or used to produce products that are applied to the land; or

~~3-1-1-e-2-ii~~ 3.1.2.e.2.B. Materials burned for energy recovery, used to produce a fuel, or contained in fuels; or

~~3-1-1-e-2-iii~~ 3.1.2.e.2.C. Materials accumulated speculatively; or

~~3-1-1-e-2-iv~~ 3.1.2.e.2.D. (Reserved).

~~3-1-1-f~~ 3.1.2.f. Documentation of claims that materials are not wastes or are conditionally exempt from regulation. Respondents in actions to enforce regulations implementing the State Act who raise a claim that a

certain material is not a 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.

~~3-4-2-~~ 3.1.3. Definition of Hazardous Waste.

~~3-4-2-a-~~ 3.1.3.a. A waste as defined in Section 3.1.1 of these regulations is a hazardous waste if:

~~3-4-2-a-i-~~ 3.1.3.a.1. It is not excluded from regulation as a hazardous waste under ~~Section 3-4-3-b~~ Section 3.1.4.b of these regulations; and

~~3-4-2-a-2-~~ 3.1.3.a.2. It meets any of the following criteria:

~~3-4-2-a-2-i-~~ 3.1.3.a.2.A. It is listed in Section 3.4 of these regulations and has not been excluded from the list in Section 3.4 of these regulations pursuant to Section 16 of these regulations.

~~3-4-2-a-2-ii-~~ 3.1.3.a.2.B. It is a mixture of a waste and a hazardous waste that is listed in Section 3.4 of these regulations solely because it exhibits one or more of the characteristics of hazardous waste identified in Section 3.3 of these regulations, unless the resultant mixture no longer exhibits any characteristic of hazardous waste identified in Section 3.3 of these regulations.

~~3-4-2-a-2-iii-~~ 3.1.3.a.2.C. It is a mixture of a waste and one or more hazardous wastes listed in Section 3.4 of these regulations and has not been excluded from ~~this paragraph under~~ regulation pursuant to Section 16 of these regulations; however, the following mixtures of solid wastes and hazardous wastes listed in Section 3.4 of these regulations are not hazardous wastes (except by application of ~~Section 3-4-2-a-2-iv~~ er-3-4-2-a-2-i Section 3.1.3.a.2.A or 3.1.3.a.2.D of these regulations) if the generator complies with the requirements contained in ~~Section 3-4-2-a-3~~ Section 3.1.3.a.3 of these regulations:

~~3-4-2-a-2-iii-A-~~ 3.1.3.a.2.C.i. It is one or more of the following spent solvents listed in Section 3.4.2 of these regulations -- carbon tetrachloride, tetrachloroethylene, and trichloroethylene -- provided that 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 one part per million (1 ppm); or

~~3-4-2-a-2-iii-B-~~ 3.1.3.a.2.C.ii. It is one or more of the following spent solvents listed in Section 3.4.2 of these regulations -- methylene chloride, 1,1,1-trichloroethane, chlorobenzene, o-dichlorobenzene, cresols, cresylic acid, nitrobenzene, toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, and spent chlorofluorocarbon solvents -- provided that 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 twenty-five parts per million (25 ppm); or

~~3.1.2.a.2.iii.G~~ 3.1.3.a.2.C.iii. It is the following waste listed in Section 3.4.3 of these regulations -- heat exchanger bundle cleaning sludge from the petroleum refining industry (EPA Hazardous Waste Number K050); or

~~3.1.2.a.2.iii.D~~ 3.1.3.a.2.C.iv. It is a discarded commercial chemical product, or chemical intermediate listed in Section 3.4.4 of these regulations, arising from "de minimis" losses of these materials from manufacturing operations produced in the manufacturing process. For purposes of this subsection, "de minimis" losses include those from normal material handling operations such as spills from the unloading or transfer of materials from bins or other containers, or leaks from pipes, valves, or other devices used to transfer materials; minor leaks from process equipment, storage tanks, or containers; leaks from well-maintained pump packings and seals; sample purgings; relief device discharges; discharges from safety showers or the rinsing and cleaning of personal safety equipment; and rinsate from empty containers or from containers that are rendered empty by that rinsing; or

~~3.1.2.a.2.iii.E~~ 3.1.3.a.2.C.v. It is a wastewater resulting from laboratory operations containing toxic (T) wastes listed in Section 3.4 of these regulations, provided 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 pretreatment system, or provided the wastes' combined annualized average concentration does not exceed one part per million (1 ppm) in the headworks of the facility's wastewater treatment or pretreatment facility. Toxic (T) wastes used in laboratories that are demonstrated not to be discharged to wastewater are not to be included in this calculation.

~~3.1.2.a.2.iv~~ 3.1.3.a.2.D. It exhibits any of the characteristics of hazardous waste identified in Section 3.3 of these regulations.

~~3.1.2.a.3~~ 3.1.3.a.3. In order for a mixture of a waste and one or more hazardous wastes identified in ~~Section 3.1.2.a.2.iii~~ Section 3.1.3.a.2.C of these regulations to be exempt from the definition of hazardous waste, the owner or operator must comply with the following:

~~3.1.2.a.3.A~~ 3.1.3.a.3.A. Before claiming an exemption, demonstrate in writing to the chief that the weekly ratio of the usage of solvents to the flow of wastewater in the headworks of wastewater treatment does not exceed the values listed in ~~Section 3.1.2.a.2.iii.A~~ or ~~3.1.2.a.2.iii.B~~ Section 3.1.3.a.2.C.i or 3.1.3.a.2.C.ii of these regulations; or the annualized ratio of average flow of laboratory wastes of the total flow of wastewater in the headworks of wastewater treatment or the combined annualized concentration in the headworks of wastewater treatment does not exceed the values listed in ~~Section 3.1.2.a.2.iii.E~~ Section 3.1.3.a.2.C.v of these regulations. He must also report annually to the chief the ratios or values described in this paragraph for the previous year.

~~3-4-2-a-3-ii-~~ 3.1.3.a.3.B. Annually submit to the chief a list of hazardous wastes that are expected to be present in the mixture to be exempted.

~~3-4-2-a-3-iii-~~ 3.1.3.a.3.C. Before claiming an exemption, demonstrate in writing to the chief that the mixture consists of wastewater which is treated in a wastewater treatment facility, the discharge of which is subject to regulation under W. Va. Code §20-5A-1 including wastewater at facilities which have eliminated the discharge of wastewater.

~~3-4-2-a-3-iv-~~ 3.1.3.a.3.D. Provide a certification in writing to the chief that groundwater monitoring complying with either Subpart F of 40 C.F.R. Part 265, or which is approved by the chief, is or will be in place at the wastewater treatment facility identified in Section ~~3-4-2-a-3-iii-~~ Section 3.1.3.a.3.C of these regulations. A time schedule for the installation of such groundwater monitoring must be included. This requirement does not apply to wastewater treatment units or containers.

~~3-4-2-a-4-~~ 3.1.3.a.4. Before claiming an exemption, the owner or operator of each wastewater treatment facility receiving mixtures of wastes under Section ~~3-4-2-a-2~~ Section 3.1.3.a.2 of these regulations shall notify the chief of the receipt of such wastes on a form prescribed by the chief.

~~3-4-2-b-~~ 3.1.3.b. A waste which is not excluded from regulation under Section ~~3-4-2-a-4~~ Section 3.1.3.a.1 of these regulations becomes a hazardous waste when any of the following events occur:

~~3-4-2-b-1-~~ 3.1.3.b.1. In the case of a waste listed in Section 3.4 of these regulations when the waste first meets the listing description set forth in Section 3.4 of these regulations;

~~3-4-2-b-2-~~ 3.1.3.b.2. In the case of a mixture of a waste and one or more listed hazardous wastes, when a hazardous waste listed in Section 3.4 of these regulations is first added to the waste;

~~3-4-2-b-3-~~ 3.1.3.b.3. In the case of any other waste (including a waste mixture), when the waste exhibits any of the characteristics identified in Section 3.3 of these regulations.

~~3-4-2-e-~~ 3.1.3.c. Unless and until it meets the criteria of Section ~~3-4-2-d~~ Section 3.1.3.d. of these regulations:

~~3-4-2-e-1-~~ 3.1.3.c.1. A hazardous waste will remain a hazardous waste.

~~3-4-2-e-2-i-~~ 3.1.3.c.2.A. Except as otherwise provided in Section ~~3-4-2-e-2-ii-~~ 3.1.3.c.2.B of these regulations, any waste generated from the treatment, storage, or disposal of a hazardous waste, including any sludge, spill residue, ash, emissions control dust, or leachate (but not including precipitation runoff) is a hazardous waste. However, materials that are reclaimed from waste and that are used beneficially are not 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.

~~3-4-2-e-2-ii~~ 3.1.3.c.2.B. The following wastes are not hazardous wastes 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: (A) Waste pickle liquor sludge generated by lime stabilization of spent pickle liquor from the iron and steel industry (SIC Codes 331 and 332); (B) wastes from burning any of the materials exempted from regulation by ~~Section-3-4-5-a-3~~ Section 3.1.6.c of these regulations.

~~3-4-2-d~~ 3.1.3.d. Any waste described in ~~Section--3-4-2-e~~ Section 3.1.3.c of these regulations is not a hazardous waste if it meets the following criteria:

~~3-4-2-d-1~~ 3.1.3.d.1. In the case of any waste, it does not exhibit any of the characteristics identified in Section 3.3 of these regulations.

~~3-4-2-d-2~~ 3.1.3.d.2. In the case of a waste which is a listed waste under Section 3.4 of these regulations, contains a waste listed under Section 3.4 of these regulations or is derived from a waste listed in Section 3.4 of these regulations, it also has been excluded from ~~Section-3-4-2-e~~ Section 3.1.3.c of these regulations under Section 16 of these regulations.

~~3-4-3~~ 3.1.4. Exclusions.

~~3-4-3-a~~ 3.1.4.a. Materials which are not wastes:

~~The following materials are not wastes for the purposes of this section:~~

~~3-4-3-a-1-i~~ 3.1.4.a.1.A. Domestic sewage; and

~~3-4-3-a-1-ii~~ 3.1.4.a.1.B. Any mixture of domestic sewage and other wastes that passes through a sewer system to a publicly-owned treatment works for treatment. "Domestic sewage" means untreated sanitary wastes that pass through a sewer system.

~~3-4-3-a-2~~ 3.1.4.a.2. 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.

~~3-4-3-a-3~~ 3.1.4.a.3. Irrigation return flows.

~~3-4-3-a-4~~ 3.1.4.a.4. Source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. §2011.

~~3-4-3-a-5~~ 3.1.4.a.5. Materials subjected to in-situ mining techniques which are not removed from the ground as part of the extraction process.

~~3-4-3-a-6~~ 3.1.4.a.6. 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 ~~Section 3.1.4.e.8~~ Section 3.1.1.c.8 of these regulations.

~~3.1.4.a.7~~ 3.1.4.a.7. Spent sulfuric acid used to produce virgin sulfuric acid, unless it is accumulated speculatively as defined in ~~Section 3.1.4.e.8~~ Section 3.1.1.c.8 of these regulations.

3.1.4.a.8. 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:

3.1.4.a.8.A. 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;

3.1.4.a.8.B. Reclamation does not involve controlled flame combustion (such as occurs in boilers, industrial furnaces, or incinerators);

3.1.4.a.8.C. The secondary materials are never accumulated in such tanks for over twelve (12) months without being reclaimed; and

3.1.4.a.8.D. The reclaimed material is not used to produce a fuel, or used to produce products that are used in a manner constituting disposal.

~~3.1.4.b~~ 3.1.4.b. Wastes which are not hazardous wastes: ~~The following wastes are not hazardous wastes:~~

~~3.1.4.b.1~~ 3.1.4.b.1. 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 waste 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).

~~3.1.4.b.2~~ 3.1.4.b.2. Wastes generated by any of the following and which are returned to the soil as fertilizers:

~~3.1.4.b.2.i~~ 3.1.4.b.2.A. The growing and harvesting of agricultural crops.

~~3.1.4.b.2.ii~~ 3.1.4.b.2.B. The raising of animals, including animal manures.

~~3.1.4.b.3~~ 3.1.4.b.3. Mining overburden returned to the mine site.

~~3.1.4.b.4~~ 3.1.4.b.4. 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.

~~3.1.4.b.5~~ 3.1.4.b.5. Drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas or geothermal energy.

~~3.1.4.b.6.i~~ 3.1.4.b.6.A. Wastes which fail the test for the

characteristic of EP toxicity because chromium is present or are listed in Section 3.4 of these regulations due to the presence of chromium which do not fail the test for the characteristic of EP toxicity 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 it is shown by a waste generator or by waste generators that:

3-4-3-b-6-i-A 3.1.4.b.6.A.i. The chromium in the waste is exclusively (or nearly exclusively) trivalent chromium; and

3-4-3-b-6-i-B 3.1.4.b.6.A.ii. The waste is generated from an industrial process which uses trivalent chromium exclusively (or nearly exclusively) and the process does not generate hexavalent chromium; and

3-4-3-b-6-i-G 3.1.4.b.6.A.iii. The waste is typically and frequently managed in non-oxidizing environments.

3-4-3-b-6-ii 3.1.4.b.6.B. Specific wastes which meet the standard in paragraphs ~~(b)-(6)-(i)~~, ~~(A)~~, ~~(B)~~, and ~~(C)~~ of this subsection Section 3.1.4.b.6.A of these regulations, (so long as they do not fail the test for the characteristic of EP toxicity, and do not fail the test for any other characteristic) are:

3-4-3-b-6-iii-A 3.1.4.b.6.B.i. Chrome (blue) trimmings generated by the following sub-categories 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.

3-4-3-b-6-iii-B 3.1.4.b.6.B.ii. Chrome (blue shavings generated by the following sub-categories 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.

3-4-3-b-6-iii-G 3.1.4.b.6.B.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.

3-4-3-b-6-iii-D 3.1.4.b.6.B.iv. Sewer screenings generated by the following sub-categories 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.

3-4-3-b-6-iii-E 3.1.4.b.6.B.v. Wastewater treatment sludges generated by the following sub-categories 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.

3-4-3-b-6-iii-F 3.1.4.b.6.B.vi. Wastewater treatment sludges generated by the following sub-categories 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.

3-4-3-b-6-iii-G- 3.1.4.b.6.B.vii. Waste scrap leather from the leather tanning industry, the shoe manufacturing industry, and other leather product manufacturing industries.

3-4-3-b-6-iii-H- 3.1.4.b.6.B.viii. Wastewater treatment sludges from the production of TiO2 pigment using chromium-bearing ores by the chloride process.

3-4-3-b-7- 3.1.4.b.7. Waste from the extraction, beneficiation, and processing of ores and minerals (including coal), including phosphate rock and overburden from the mining of uranium ore.

3-4-3-b-8- 3.1.4.b.8. Cement kiln dust waste.

3-4-3-b-9- 3.1.4.b.9. Waste which consists of discarded wood or wood products which fails the test for the characteristic of EP toxicity 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.

3-4-3-e- 3.1.4.c. Hazardous wastes which are exempted from certain regulations. 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 Sections 4, 6, 8, or 11 of these regulations or under 40 C.F.R. Part 265 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 ninety (90) days after the unit ceases to be operated for manufacturing, or for storage or transportation of the product or raw materials.

3-4-3-d- 3.1.4.d. Samples.

3-4-3-d-1- 3.1.4.d.1. Except as provided in Section--3-4-3-d-2 Section 3.1.4.d.2 of these regulations, a sample of 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 regulations when:

3-4-3-d-1-i- 3.1.4.d.1.A. The sample is being transported to a laboratory for the purpose of testing; or

3-4-3-d-1-ii- 3.1.4.d.1.B. The sample is being transported back to the sample collector after testing; or

3-4-3-d-1-iii- 3.1.4.d.1.C. The sample is being stored by the sample collector before transport to a laboratory for testing; or

3-4-3-d-1-iv- 3.1.4.d.1.D. The sample is being stored in a laboratory before testing; or

3-4-3-d-1-v- 3.1.4.d.1.E. The sample is being stored in a laboratory after testing but before it is returned to the sample collector; or

3-4-3-d-1-vi- 3.1.4.d.1.F. The sample is being stored temporarily in the laboratory after testing for a specific purpose (for example, until

conclusion of a court case or enforcement action where further testing of the sample may be necessary).

~~3.1.3.d.2~~ 3.1.4.d.2. In order to qualify for the exemption in ~~Sections 3.1.3.d.1 and 3.1.3.d.2~~ Sections 3.1.4.d.1.A and 3.1.4.d.1.B of these regulations, a sample collector shipping samples to a laboratory and a laboratory returning samples to a sample collector must:

~~3.1.3.d.2.i~~ 3.1.4.d.2.A. Comply with U.S. Department of Transportation (DOT), U.S. Postal Service (USPS), or any other applicable shipping requirements; or

~~3.1.3.d.2.ii~~ 3.1.4.d.2.B. 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:

~~3.1.3.d.2.ii.A~~ 3.1.4.d.2.B.i. Assure that the following information accompanies the sample:

~~3.1.3.d.2.ii.A.1~~ 3.1.4.d.2.B.i.1. The sample collector's name, mailing address, and telephone number;

~~3.1.3.d.2.ii.A.2~~ 3.1.4.d.2.B.i.2. The laboratory's name, mailing address, and telephone number;

~~3.1.3.d.2.ii.A.3~~ 3.1.4.d.2.B.i.3. The quantity of the sample;

~~3.1.3.d.2.ii.A.4~~ 3.1.4.d.2.B.i.4. The date of shipment; and

~~3.1.3.d.2.ii.A.5~~ 3.1.4.d.2.B.i.5. A description of the sample.

~~3.1.3.d.2.ii.B~~ 3.1.4.d.2.B.ii. Package the sample so that it does not leak, spill, or vaporize from its packaging.

~~3.1.3.d.3~~ 3.1.4.d.3. 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 ~~Section 3.1.3.d.1~~ Section 3.1.4.d.1 of these regulations.

~~3.1.4~~ 3.1.5. (Reserved).

~~3.1.5~~ 3.1.6. Requirements for Recyclable Materials.

~~3.1.5.a.1~~ 3.1.6.a. Hazardous wastes that are recycled are subject to the requirements for generators, transporters, and storage facilities of ~~Sections 3.1.5.b and 3.1.5.e~~ Sections 3.1.6.d through 3.1.6.f of these regulations, except for the materials listed in ~~Sections 3.1.5.a.2 and 3.1.5.a.3~~ Sections 3.1.6.b and 3.1.6.c of these regulations. Hazardous wastes that are recycled will be known as "recyclable materials."

~~3.1.5.a.2~~ 3.1.6.b. The following recyclable materials are not subject to the requirements of ~~this section~~ Section 3.1.6 of these regulations but are regulated under Sections 9.3 through 9.7 of these regulations and all applicable provisions of Section 11 of these regulations:

~~3.1.5.a.2.i~~ 3.1.6.b.1. Recyclable materials used in a manner

constituting disposal (Section 9.3 of these regulations):

~~3-4-5-a-2-iii~~ 3.1.6.b.2. Hazardous wastes burned for energy recovery in boilers and industrial furnaces.

~~3-4-5-a-2-iii~~ 3.1.6.b.3. (Reserved).

~~3-4-5-a-2-iv~~ 3.1.6.b.4. Recycled materials from which precious metals are reclaimed (Section 9.6 of these regulations).

~~3-4-5-a-2-v~~ 3.1.6.b.5. Spent lead-acid batteries that are being reclaimed (Section 9.7 of these regulations).

~~3-4-5-a-3~~ 3.1.6.c. The following recyclable materials are not subject to regulation under Sections 4 through 8 of these regulations and are not subject to the notification requirements of Section 10 of the State Act.

~~3-4-5-a-3-i~~ 3.1.6.c.1. Reclaimed industrial ethyl alcohol;

~~3-4-5-a-3-ii~~ 3.1.6.c.2. Used batteries (or used battery cells) returned to a battery manufacturer for regeneration;

~~3-4-5-a-3-iii~~ 3.1.6.c.3. Used oil that exhibits one or more of the characteristics of hazardous waste but is recycled in some other manner than being burned for energy recovery; or

~~3-4-5-a-3-iv~~ 3.1.6.c.4. Scrap metal.

~~3-4-5-a-3-v~~ 3.1.6.c.5. Fuels produced from the refining of oil bearing hazardous wastes along with normal process streams at a petroleum refining facility, if such wastes result from normal petroleum refining, production, and transportation practices;

~~3-4-5-a-3-vi~~ 3.1.6.c.6. Oil reclaimed from hazardous waste resulting from normal petroleum refining, production, and transportation practices which oil is to be refined along with normal process streams at a petroleum refining facility; or

~~3-4-5-a-3-vii~~ 3.1.6.c.7. Coke from the iron and steel industry that contains hazardous waste from the iron and steel production process.

~~3-4-5-b~~ 3.1.6.d. Generators and transporters of recyclable materials shall comply with all applicable provisions of Sections 4, 5 and 6 of these regulations except as provided in ~~Section-3-4-5-a~~ Section 3.1.6.a through 3.1.6.c of these regulations. Generators and transporters of recyclable materials are also subject to the applicable provisions of West Virginia Administrative Regulations, Department of Highways, Series 7 ~~Transportation-of-Hazardous-Wastes-by-Highway-Transporters~~, and West Virginia Administrative Regulations, Public Service Commission, Series 11. ~~Transporting-Hazardous-Waste-by-Rail~~

~~3-4-5-e-4~~ 3.1.6.e. Owners or operators of facilities that store recyclable materials before they are recycled are regulated under all applicable provisions of Sections 4, 8.1 through 8.10, 8.13, 11, and 13 of these regulations, except as provided in ~~Section--3-4-5-a~~ Section 3.1.6.a through 3.1.6.c of these regulations. The recycling process

rather than under the provisions of Section 9.6 of these regulations.

~~3.4.5.d.2.i.A~~ 3.1.6.g.2.A.i. If a generator is accumulating the waste, the director will issue a notice setting forth the factual basis for the decision and stating that the person must comply with the applicable requirements of Sections 6.1, 6.3, 6.4, and 6.5 of these regulations. The notice will become final within thirty (30) days, unless the person served requests a public hearing to challenge the decision. Upon receiving such a request, the director will hold a public hearing. The director will provide notice of the hearing to the public and allow public participation at the hearing. The director will issue a final order after the hearing stating whether or not compliance with Section 6 of these regulations is required. The order becomes effective thirty (30) days after service of the decision unless the director specifies a later date or unless review by the director is requested. The order may be appealed to the director by any person who participated in the public hearing. The director may choose to grant or to deny the appeal. Final agency action occurs when a final order is issued and agency review procedures are exhausted.

~~3.4.5.d.2.i.B~~ 3.1.6.g.2.A.ii. If the person is accumulating the recyclable material at a storage facility, the notice will state that the person must obtain a permit in accordance with all applicable revisions of Section 11 of these regulations. The owner or operator of the facility must apply for a permit within no less than sixty (60) days and no more than six (6) months of notice, as specified in the notice. If the owner or operator of the facility wishes to challenge the director'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 agency's determination. The question of whether the director's decision was proper will remain open for consideration during the public comment period discussed under Section 11.25 of these regulations and in any subsequent hearing.

~~3.4.6~~ 3.1.7. Residue of Hazardous Waste in Empty Containers.

~~3.4.6.a.1. Any hazardous waste remaining in either (i) an empty container or (ii) an inner liner removed from an empty container, as defined in Section 3.1.6.b of these regulations is not subject to these regulations.~~

~~3.4.6.a.2. Any hazardous waste in either (i) a container that is not empty or (ii) an inner liner removed from a container that is not empty, as defined in Section 3.1.6.b of these regulations, is subject to these regulations.~~

3.1.7.a. Any hazardous waste remaining in either an empty container or an inner liner removed from an empty container, as defined in Sections 3.1.7.c through 3.1.7.e of these regulations is not subject to these regulations.

3.1.7.b. Any hazardous waste in either a container that is not empty or an inner liner removed from a container that is not empty, as defined in Sections 3.1.7.c through 3.1.7.e of these regulations, is subject to these regulations.

~~3-4-6-b-4-~~ 3.1.7.c. 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 in Section 3.4.4.c of these regulations is empty if:

~~3-4-6-b-4-i-~~ 3.1.7.c.1. All wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container (e.g., purging, pumping, and aspirating); and

~~3-4-6-b-4-ii-~~ 3.1.7.c.2. No more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner; or

~~3-4-6-b-4-iii-A-~~ 3.1.7.c.2.A. No more than three percent (3%) 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 one hundred and ten (110) gallons in size; or

~~3-4-6-b-4-iii-B-~~ 3.1.7.c.2.B. 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 one hundred and ten (110) gallons in size.

~~3-4-6-b-2-~~ 3.1.7.d. A container that has held a hazardous waste that is a compressed gas is empty when the pressure in the container approaches atmospheric.

~~3-4-6-b-3-~~ 3.1.7.e. A container or an inner liner removed from a container that has held a hazardous waste identified in Section 3.4.4.c of these regulations is empty if:

~~3-4-6-b-3-A-i-~~ 3.1.7.e.1. The container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate;

~~3-4-6-b-3-A-ii-~~ 3.1.7.e.2. 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

~~3-4-6-b-3-A-iii-~~ 3.1.7.e.3. 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.

3.2. Criteria for Identifying the Characteristics of Hazardous Waste and for Listing Hazardous Waste.

3.2.1. Criteria for Identifying the Characteristics of Hazardous Waste.

3.2.1.a. The director shall identify and define a characteristic of hazardous waste upon determining that:

3.2.1.a.1. A waste that exhibits the characteristic may:

~~3-2-4-a-4-i-~~ 3.2.1.a.1.A. Cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or

~~3.2.1.a.1.iii~~ 3.2.1.a.1.B. 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

3.2.1.b. The characteristic can be:

~~3.2.1.b.i~~ 3.2.1.b.1. Measured by an available standardized test method which is reasonably within the capability of generators of waste or private sector laboratories that are available to serve generators of waste; or

~~3.2.1.b.ii~~ 3.2.1.b.2. Reasonably detected by generators of waste through their knowledge of their waste.

3.2.2. Criteria for Listing Hazardous Waste.

3.2.2.a. The director may list a waste as being hazardous upon determining that the waste meets one of the following criteria:

3.2.2.a.1. It exhibits any of the characteristics of hazardous waste identified in Section 3.3 of these regulations.

3.2.2.a.2. 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 fifty (50) milligrams per kilogram, an inhalation LC-50 toxicity (rat) of less than two (2) milligrams per liter, or a dermal LD-50 toxicity (rabbit) of less than two hundred (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.)

3.2.2.a.3. It contains any of the toxic constituents listed in Appendix VIII of these regulations, unless, after considering any of the following factors, the director concludes that the waste is not 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:

~~3.2.2.a.3.i~~ 3.2.2.a.3.A. The nature of the toxicity presented by the constituent.

~~3.2.2.a.3.ii~~ 3.2.2.a.3.B. The concentration of the constituent in the waste.

~~3.2.2.a.3.iii~~ 3.2.2.a.3.C. 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 ~~Section 3.2.2.a.3.vii~~ Section 3.2.2.a.3.G of these regulations.

~~3.2.2.a.3.iv~~ 3.2.2.a.3.D. The persistence of the constituent or any toxic degradation product of the constituent.

~~3.2.2.a.3.v~~ 3.2.2.a.3.E. The potential for the constituent or any toxic degradation product of the constituent to degrade into non-harmful constituents and the rate of degradation.

~~3-2-2-a-3-vi-~~ 3.2.2.a.3.F. The degree to which the constituent or any degradation product of the constituent bioaccumulates in ecosystems.

~~3-2-2-a-3-vii-~~ 3.2.2.a.3.G. The plausible types of improper management to which the waste could be subjected.

~~3-2-2-a-3-viii-~~ 3.2.2.a.3.H. The quantities of the waste generated at individual generation sites or on a regional or national basis.

~~3-2-2-a-3-ix-~~ 3.2.2.a.3.I. 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.

~~3-2-2-a-3-x-~~ 3.2.2.a.3.J. Action taken by other governmental agencies or regulatory programs based on the health or environmental hazard posed by the waste or waste constituent.

~~3-2-2-a-3-xi-~~ 3.2.2.a.3.K. Such other factors as may be appropriate.

Note: Substances will be listed on Appendix VIII of these regulations, only if they have been shown in scientific studies to have toxic, carcinogenic, mutagenic, or teratogenic effects on humans or other life forms. Wastes listed in accordance with these criteria will be designated as toxic wastes.

3.2.2.b. The director may list classes or types of wastes as hazardous waste if he 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 W. Va. Code §20-5E-3(6).

3.2.2.c. The director will use the criteria for listing, specified in ~~this section~~ Section 3.2.2 of these regulations, to establish the exclusion limits referred to in Section 10.2.3 of these regulations.

3.3. Characteristics of Hazardous Waste.

3.3.1. General.

3.3.1.a. A waste as defined in ~~Section 3.1.4~~ Section 3.1.2 of these regulations which is not excluded from regulation as a hazardous waste under ~~Section 3.1.4.b~~ Section 3.1.4.b of these regulations is a hazardous waste if it exhibits any of the characteristics identified in ~~this section~~ Section 3.3 of these regulations.

3.3.1.b. A hazardous waste which is identified by a characteristic in ~~this section~~ Section 3.3 of these regulations, but is not listed as a hazardous waste in Section 3.4 of these regulations is assigned the EPA Hazardous Waste Number set forth in the respective characteristic in this section. This number shall be used in complying with the notification requirements of Section 4 of these regulations and certain record keeping and reporting requirements under these regulations.

3.3.1.c. For purposes of Section 3.3 of these regulations, the director will consider a sample obtained using any of the applicable sampling methods specified in Appendix I of these regulations to be a representative sample within the meaning of Section 2 of these regulations.

3.3.2. Characteristic of Ignitability.

3.3.2.a. A waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

3.3.2.a.1. It is a liquid, other than an aqueous solution containing less than twenty-four percent (24%) alcohol by volume, and has a flashpoint less than 60 degrees C (140 degrees 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, or a Setaflash Closed Cup Tester, using the test method specified in ASTM Standard D-3278-78, or as determined by an equivalent method. ~~(See Section 2 of these regulations and 40 C.F.R. §269.44 for test method information.)~~ ASTM standards are available from the American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, PA 19103.

3.3.2.a.2. 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.

3.3.2.a.3. It is an ignitable compressed gas as defined in 40 C.F.R. §173.300 and as determined by the test method described in that regulation or an equivalent test method. ~~(see Section 2 of these regulations)~~

3.3.2.a.4. It is an oxidizer as defined in 40 C.F.R. §173.51.

3.3.2.b. A waste that exhibits the characteristic of ignitability, but is not listed as a hazardous waste by the Administrator, or the director has the EPA Hazardous Waste Number of D001.

3.3.3. Characteristic of Corrosivity.

3.3.3.a. A waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

3.3.3.a.1. 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 either the test method specified in the ~~"Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods,"~~ SW-846, or an equivalent test method approved by the Administrator under the procedures set forth in 40 C.F.R. §§260.20 and 260.21.

3.3.3.a.2. 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 degrees C (130 degrees F) as determined by the test method specified in NACE (National Association of Corrosion Engineers) Standard TM-01-69 as standardized in ~~"Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods,"~~ SW-846, or an equivalent test method. ~~(see Section 2 of these regulations)~~

3.3.3.b. A waste that exhibits the characteristics of corrosivity but is not listed as a hazardous waste by the Administrator or director has the EPA Hazardous Waste Number of D002.

itself is exempt from these regulations.

~~3.4.5.e.2.~~ 3.1.6.f. 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 ~~Section 3.4.5.a~~ Section 3.1.6.a through 3.1.6.c of these regulations:

~~3.4.5.e.2.i.~~ 3.1.6.f.1. Notification requirements of Section 4 of these regulations; and

~~3.4.5.e.2.ii.~~ 3.1.6.f.2. Sections 8.5.2 and 8.5.3 of these regulations (concerning use of the manifest and manifest discrepancies).

~~3.4.5.d. Additional regulation of certain hazardous waste recycling activities on a case-by-case basis.~~

3.1.5.g. Additional regulation of certain hazardous waste recycling activities may be imposed on a case-by-case basis in accordance with the provisions of Sections 3.1.6.g.1 and 3.1.6.g.2 of these regulations.

~~3.4.5.d.4.~~ 3.1.6.g.1. The director may decide on a case-by-case basis that persons accumulating or storing the recyclable materials described in ~~Section 3.4.5.a.2.iv~~ Section 3.1.6.b.4 of these regulations should be regulated under ~~Sections 3.4.5.b and 3.4.5.e~~ Sections 3.1.6.d through 3.1.6.f of these regulations. 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 director will consider the following factors:

~~3.4.5.d.4.a.~~ 3.1.6.g.1.A. The types of materials accumulated or stored and the amounts accumulated or stored;

~~3.4.5.d.4.b.~~ 3.1.6.g.1.B. The method of accumulation or storage;

~~3.4.5.d.4.c.~~ 3.1.6.g.1.C. The length of time the materials have been accumulated or stored before being reclaimed;

~~3.4.5.d.4.d.~~ 3.1.6.g.1.D. Whether any contaminants are being released into the environment, or are likely to be so released; and

~~3.4.5.d.4.e.~~ 3.1.6.g.1.E. Other relevant factors.

~~The procedures for this decision are set forth in Section 3.4.5.d.2 of these regulations.~~

~~3.4.5.d.2.~~ 3.1.6.g.2. Procedures for case-by-case regulation of hazardous waste recycling activities.

~~3.4.5.d.2.i.~~ 3.1.6.g.2.A. The director will use the following procedures when determining whether to regulate hazardous waste recycling activities described in ~~Section 3.4.5.a.2.iv~~ Section 3.1.6.b.4 of these regulations under the provisions of ~~Sections 3.4.5.b and 3.4.5.e~~ Sections 3.1.6.d through 3.1.6.f of these regulations,

3.3.4. Characteristic of Reactivity.

3.3.4.a. A waste exhibits the characteristic of reactivity if a representative sample of the waste has any of the following properties:

3.3.4.a.1. It is normally unstable and readily undergoes violent changes without detonating; or

3.3.4.a.2. It reacts violently with water; or

3.3.4.a.3. It forms potentially explosive mixtures with water; or

3.3.4.a.4. 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; or

3.3.4.a.5. 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; or

3.3.4.a.6. It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement; or

3.3.4.a.7. It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure; or

3.3.4.a.8. It is a forbidden explosive as defined in 49 C.F.R. §173.51, a Class A explosive as defined in 49 C.F.R. §173.53, or a Class B explosive as defined in 49 C.F.R. §173.88.

3.3.4.b. A waste that exhibits the characteristic of reactivity but is not listed as a hazardous waste by the Administrator or director has the EPA Hazardous Waste Number of D003.

3.3.5. Characteristic of EP Toxicity.

3.3.5.a. A waste exhibits the characteristic of EP toxicity if, using the test methods described in Appendix II of these regulations or equivalent methods approved by the Administrator under the procedures set forth in 40 C.F.R. §§260.20 and 260.21, the extract from a representative sample of the waste contains any of the contaminants listed in Table II of these regulations at a 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, is considered to be the extract for the purposes of ~~this section~~ Section 3.3.5.a of these regulations.

3.3.5.b. A waste that exhibits the characteristic of EP toxicity, but is not listed as a hazardous waste by the Administrator or director has the hazardous waste number specified in Table II of these regulations which corresponds to the toxic contaminant causing it to be hazardous.

TABLE II

Maximum Concentration of Contaminants
for Characteristic of EP Toxicity

EPA Hazardous Waste Number	Contaminant	Maximum Concentration (Milligrams per liter)
D004	Arsenic	5.0
D005	Barium	100.0
D006	Cadmium	1.0
D007	Chromium (total)	5.0
D008	Lead	5.0
D009	Mercury	0.2
D010	Selenium	1.0
D011	Silver	5.0
D012	Endrim (1,2,3,4,10,10-hexachloro-1 7-epoxy-1,4,4a,5,6,7,8,8a-octa- hydro-1 4-endo, endo-5, 8-dimethano naphthalene)	0.02
D013	Lindane (1,2,3,4,5,6-hexachloro- cyclohexane, gamma isomer)	0.4
D014	Methoxychlor (1,1,1-Trichloro-2-2, -bis (p-methoxyphenyl) ethane).	10.0
D015	Toxaphene (C ₁₀ H ₁₀ Cl ₈ , Technical chlorinated champhene, 67-69 percent chlorine).	0.5
D016	2,4-D, (2,4-Dichlorophenoxyacetic acid).	10.0
D017	2,4,5-TP Silvex (2,4,5-Trichloro- phenoxypropionic acid).	1.0

3.4. Lists of Hazardous Wastes.

3.4.1. General.

3.4.1.a. A waste is a hazardous waste if it is listed in Section 3.4 of these regulations unless it has been excluded from this list under Section 16 of these regulations.

3.4.1.b. The director will indicate his basis for listing the classes or types of wastes listed in Section 3.4 of these regulations by employing one or more of the following hazard codes: Ignitable Waste (I), Corrosive Waste (C), Reactive Waste (R), EP Toxic Waste (E), Acute Hazardous Waste (H), and Toxic Waste (T).

3.4.1.b.1. Appendix VII of these regulations identifies the constituent which caused the director to list the waste as an EP Toxic Waste (E) or Toxic Waste (T) in Sections 3.4.2 and 3.4.3 of these regulations.

3.4.1.c. Each hazardous waste listed in Section 3.4 of these regulations is assigned a Hazardous Waste Number which precedes the name of the waste. This number must be used in complying with the notification requirements of Section 4 of these regulations and certain record keeping and reporting requirements under Section 6, Section 8, and Section 11 of these regulations.

3.4.1.d. The following hazardous wastes listed in Section 3.4.2 or 3.4.3 of these regulations are subject to the exclusion limits for acutely hazardous wastes established in Section 10.2.5 of these regulations: (Reserved)

3.4.2. Hazardous Waste from Nonspecific Sources.

3.4.2.a. Hazardous waste from nonspecific sources are listed in Table III of these regulations.

3.4.3. Hazardous Waste from Specific Sources.

3.4.3.a. Hazardous waste from specific sources are listed in Table IV of these regulations.

TABLE III

Hazardous Waste from Nonspecific Sources

EPA Hazardous Waste Number	Hazardous Waste	Hazard Code
F001	The following spent halogenated solvents used in degreasing: tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; and sludges from the recovery of these solvents in degreasing operations.	(T)
F002	The following spent halogenated solvents: tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, orthodichlorobenzene, and trichlorofluoromethane; and the still bottoms from the recovery of these solvents.	(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; and the still bottoms from the recovery of these solvents.	(I)
F004	The following spent non-halogenated solvents: cresols and cresylic acid, and nitrobenzene; and the still bottoms from the recovery of these solvents.	(T)
F004	The following spent non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, and pyridine; and the still bottoms from the recovery of these solvents.	(I, T)

TABLE III continued

Hazardous Waste from Nonspecific Sources

EPA Hazardous Waste Number	Hazardous Waste	Hazard Code
F001	<u>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 or 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.</u>	(T)
F002	<u>The following spent halogenated solvents: tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,2,2-trichloro-1,2,2-trifluoroethane, orthodichlorobenzene, and trichlorofluoromethane; all spent solvent mixtures or blends 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 F001, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.</u>	(T)
F003	<u>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 or blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures or 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.</u>	(T)

TABLE III continued

Hazardous Waste from Nonspecific Sources

EPA Hazardous Waste Number	Hazardous Waste	Hazard Code
F004	<u>The following spent non-halogenated solvents: cresols and cresylic acid, and nitrobenzene; all spent solvent mixtures or 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.</u>	(T)
F005	<u>The following spent non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, and pyridine; all spent solvent mixtures or 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 F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.</u>	(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)
F019	Wastewater treatment sludges from the chemical conversion coating 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)

TABLE III continued

Hazardous Waste from Nonspecific Sources

EPA Hazardous Waste Number	Hazardous Waste	Hazard Code
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.	(R,T)
F010	Quenching bath sludge 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 wastewater 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.	(T)
F020	(Reserved)	
F021	(Reserved)	
F022	(Reserved)	
F023	(Reserved)	
F024	Wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor cleanout wastes from the production of chlorinated aliphatic hydrocarbons, having a carbon content from one to five, utilizing free radical catalyzed processes. This listing does not include light ends, spent filters and filter aids, spent dessicants, wastewater, wastewater treatment sludges, spent catalysts and waste listed in Section 3.4.3 of these regulations.	(T)
F026	(Reserved)	
F027	(Reserved)	
F028	(Reserved)	

TABLE IV

Hazardous Waste from Specific Sources

EPA Hazardous Waste Number	Hazardous Waste	Hazard Code
K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote or pentachlorophenol or both.	(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)

TABLE IV continued

Hazardous Waste from Specific Sources

EPA Hazardous Waste Number	Hazardous Waste	Hazard Code
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)
K093	Distillation light ends from the production of phthalic anhydride from orthoxylene.	(T)
K094	Distillation bottoms from the production of phthalic anhydride from orthoxylene.	(T)
K025	Distillation bottoms from production of nitrobenzene by the nitration of benzene.	(T)

TABLE IV continued

Hazardous Waste from Specific Sources

EPA Hazardous Waste Number	Hazardous Waste	Hazard Code
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 stream stripper in the production of 1,1,1-trichloroethane.	(T)
K095	Distillation bottoms from the production of 1,1,1-trichloroethane.	(T)
K096	Heavy ends from the heavy ends column from the production 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)
K103	Process residues from aniline extraction from the production of aniline.	(T)
K104	Combined wastewater streams generated from nitrobenzene/aniline production.	(T)
K085	Distillation or fractionation column bottoms from the production of chlorobenzenes.	(T)
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.	(T)
Inorganic Chemicals:		
K071	Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.	(T)

TABLE IV continued

Hazardous Waste from Specific Sources

EPA Hazardous Waste Number	Hazardous Waste	Hazard Code
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)
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)
K097	Vacuum stripper discharge from the chlordane chlorinator 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)

TABLE IV continued

Hazardous Waste from Specific Sources

EPA Hazardous Waste Number	Hazardous Waste	Hazard Code
K041	Wastewater treatment sludge from the production of toxaphene.	(T)
K098	Untreated process wastewater 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)
K099	Untreated wastewater from the production of 2,4-D.	(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)

TABLE IV continued

Hazardous Waste from Specific Sources

EPA Hazardous Waste Number	Hazardous Waste	Hazard Code
K052	Tank bottoms (leaded) from the petroleum refining industry.	(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 the facilities within the iron and steel industry (SIC Groups 331 and 332).	(C,T)
Secondary Lead:		
K069	Emission control dust/sludge from secondary lead smelting.	(T)
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	(T)
Veterinary Pharmaceuticals:		
K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organoarsenic compounds.	(T)
K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organoarsenic compounds.	(T)
K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organoarsenic compounds.	(T)

TABLE IV continued

Hazardous Waste from Specific Sources

EPA Hazardous Waste Number	Hazardous Waste	Hazard Code
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 car sludge from coking operations.	(T)

3.4.4. Discarded Commercial Chemical Products, Off-Specification Species, Container Residues, and Spill Residues Thereof.

The following materials or items are hazardous wastes if and when they are discarded or intended to be discarded: as described in Section 3.1.1-a-2 Section 3.1.2.a.2 of these regulations, when they are burned for purposes of energy recovery in lieu of their original intended use, when they are used to produce fuels in lieu of their original intended use, when they are 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.

3.4.4.a. Any commercial chemical product or manufacturing chemical intermediate having the generic name listed in Section 3.4.4.e or 3.4.4.f of these regulations.

3.4.4.b. Any off-specification commercial chemical product or manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in Section 3.4.4.e or 3.4.4.f of these regulations.

3.4.4.c. Any residue remaining in a container or an inner liner removed from a container that has held any commercial chemical product or manufacturing chemical intermediate having the generic name listed in Section 3.4.4.e of these regulations, unless the container is empty as defined in Section 3.1.6-b-3 Section 3.1.7.e of these regulations.

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, the director 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 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.

3.4.4.d. Any residue or contaminated soil, water, or other debris resulting from the clean-up 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 Section 3.4.4.e or 3.4.4.f of these regulations, or any residue or contaminated soil, water or other debris resulting from the clean-up 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 Section 3.4.4.e or 3.4.4.f of these regulations.

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 Section 3.4.4.e or 3.4.4.f of these regulations. Where a manufacturing process waste is deemed to be a hazardous waste because it contains a substance listed in Section 3.4.4.e or 3.4.4.f of these regulations, such waste will be listed in either Section 3.4.2 or 3.4.3 of these regulations or will be identified as a hazardous waste by the characteristics set forth in Section 3.3 of these regulations.

3.4.4.e. The commercial chemical products, manufacturing chemical intermediates or off-specification commercial chemical products or manufacturing chemical intermediates referred to in Sections 3.4.4.a through 3.4.4.d of these regulations, are identified as acute hazardous wastes (H) and are subject to be the small quantity exclusion defined in Section 10.2.5 of these regulations. These wastes and their corresponding EPA hazardous waste numbers are listed in Table V of these regulations.

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 Numbers are:~~

Hazardous Waste-Number	Substance
P023	Acetaldehyde, chloro-
P002	Acetamide, N-(aminothioxomethyl)-
P057	Acetamide, 2-fluoro-
P058	Acetic acid, fluoro-, sodium salt
P066	Acetimidic acid, N-((methylcarbonyl)oxy)thio-, methyl ester
P001	3-(alpha-acetylbenzyl)-4-hydroxycoumarin and salts, when present at concentrations greater than 0.3%
P002	Acetyl-2-thiourea
P003	Aerolein
P070	Aldicarb
P004	Aldrin
P005	Allyl alcohol
P006	Aluminum phosphide
P007	5-(Aminomethyl)-3-isoxazole
P008	4-Aminopyridine
P009	Ammonium picrate (R)
P119	Ammonium vanadate
P010	Arsenic acid
P012	Arsenic (III)-oxide
P011	Arsenic (V)-oxide
P011	Arsenic pentoxide
P012	Arsenic trioxide
P038	Arsine, diethyl-
P054	Aziridine
P013	Barium cyanide
P024	Benzenamine, 4-chloro-
P077	Benzenamine, 4-nitro-
P028	Benzene, (chloromethyl)-

P042-----1,2-Benzenedial, -4-(1-hydroxy-2-(methyl-
 amino)ethyl)-
 P014-----Benzenethiol
 P028-----Benzyl-chloride
 P015-----Beryllium-dust
 P016-----Bis-(chloromethyl)-ether
 P017-----Bromoacetone
 P018-----Brucine
 P021-----Calcium-cyanide
 P123-----Camphene, -octachloro-
 P103-----Carbamimidoseleenoic-acid
 P022-----Carbon-bisulfide
 P022-----Carbon-disulfide
 P095-----Carbonyl-chloride
 P033-----Chlorine-cyanide
 P023-----Chloroacetaldehyde
 P024-----p-Chloroaniline
 P026-----1-(o-Chlorophenyl)-thiourea
 P027-----3-Chloropropionitrile
 P029-----Copper-cyanides
 P030-----Cyanides-(soluble-cyanide-salts), -not
 elsewhere-specified
 P031-----Cyanogen
 P033-----Cyanogen-chloride
 P036-----Dichloropentylarsine
 P037-----Dieldrin
 P038-----Diethylarsine
 P039-----O,O-Diethyl-S-(2-(ethylthio)ethyl)-phos-
 phoredithioate
 P041-----Diethyl-p-nitrophenyl-phosphate
 P040-----O-) -Diethyl-O-pyrazinyl-phosphorethioate
 P043-----Diisopropyl-fluorophosphate
 P044-----Diemtheate
 P045-----3,3-Dimethyl-1-(methylthio)-2-butanone,
 O-((methylamino)carbonyl)oxime
 P071-----O,O-Dimethyl-O-p-nitrophenyl-phosphore-
 thioate
 P082-----Dimethylnitrosamine
 P046-----alpha, -alpha-Dimethylpenethylamine
 P047-----4,6-Dinitro-o-cresol-and-salts
 P034-----4,6-dinitro-o-cyclohexylphenol
 P048-----2,4-dinitrophenol
 P020-----Dinoseb
 P085-----Diphosphoramidate, -octamethyl-
 P039-----Disulfoton
 P049-----2,4-Dithiobiuret
 P109-----Dithiopyrophosphoric-acid, -tetraethyl
 ester
 P050-----Endosulfan
 P088-----Endothall
 P051-----Endrin
 P042-----Epinephrine
 P046-----Ethanamine, -1,1-dimethyl-1-phenyl
 P084-----Ethanamine, -N-methyl-N-nitroso-
 P101-----Ethyl-cyanide
 P054-----Ethylenimine
 P097-----Famphur

P056-----Fluorine
 P057-----Fluoroacetamide
 P058-----Fluoroacetic-acid,-sodium-salt
 P065-----Fulminic-acid,-mercury-(ii)-salt-(R,F)
 P059-----Heptachlor
 P051-----1,2,3,4,10,10-Hexachloro-6,7-epoxy-
 1,4,4a,5,6,7,8,8a-octahydro-endo,-endo-
 1,4:5,8-dimethanonaphthalene
 P037-----1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,
 4a,5,6,7,8,8a-octahydro-endo-exo-1,4:5,8-
 dimethanonaphthalene
 P060-----1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-
 hexahydro-1,4:5,8-endo,-endo-dimethano-
 naphthalene
 P004-----1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-
 hexahydro-1,4:5,8-endo,exo-dimethanen-
 aphthalene
 P060-----Hexachlorohexahydro-exo,exo-dimethanon-
 a;thalene
 P062-----Hexaethyl-tetraphosphate
 P116-----Hydrazinecarboethicamide
 P068-----Hydrazine,-methyl-
 P063-----Hydrocyanic-acid
 P063-----Hydrogen-cyanide
 P096-----Hydrogen-phosphide
 P064-----Isocyanic-acid,-methyl-ester
 P007-----3(2H)-Isokazolone,-5-(aminomethyl)-
 P092-----Mercury,-(acetate-O)phenyl
 P065-----Mercury-fulminate-(R,F)
 P016-----Methane,-oxybis(chloro-
 P112-----Methane,-tetranitro--(R)
 P118-----Methanethiol,-trichloro-
 P059-----4,7-Methane-1H-indene,-1,4,5,6,7,8,8-
 heptachloro-3a,4,7,7a-tetrahydro-
 P066-----Methemyl
 P067-----2-Methylaziridine
 P068-----Methyl-hydrazine
 P064-----Methyl-isocyanate
 P069-----2-Methylactonitrile
 P071-----Methyl-parathion
 P072-----alpha-Naphthylthiourea
 P073-----Nickel-carbonyl
 P074-----Nickel(ii)-cyanide
 P075-----Nicotine-and-salts
 P076-----Nitric-oxide
 P077-----p-Nitroaniline
 P078-----Nitrogen-dioxide
 P076-----Nitrogen(ii)-oxide
 P078-----Nitrogen(IV)-oxide
 P081-----Nitroglycerine-(R)
 P082-----N-Nitrosodimethylamine
 P084-----N-nitrosomethylvinylamine
 P050-----5-Norbornene-2,3-dimethanol,-1,4,5,6,7,7-
 hexachloro,-cyclic-sulfite
 P085-----Octamethylprophosphoramide
 P087-----Osmium-oxide
 P087-----Osmium-tetroxide

P088-7-Oxabicyclo(2.2.1)heptane-2,3-
 dicarboxylic-acid
 P089-Parathion
 P034-Phenol, 2-cyclohexyl-4,6-dinitro-
 P048-Phenol, 2,4-dinitro-
 P047-Phenol, 2,4-dinitro-6-methyl-
 P020-Phenol, 2,4-dinitro-6-(1-methylpropyl)-
 P009-Phenol, 2,4,6-dinitro-7-ammonium-salt-(R)
 P036-Phenyl-dichloroarsine
 P092-Phenylmercuric-acetate
 P093-N-Phenylthiourea
 P094-Pherate
 P095-Phosgene
 P096-Phosphine
 P041-Phosphoric-acid, diethyl-p-nitrophenyl
 ester
 P044-Phosphorodithioic-acid, O,O-dimethyl-S-
 (2-(methylamino)-2-oxoethyl)ester
 P043-Phosphorofluoric-acid, bis(1-methylethyl)-
 ester
 P094-Phosphorothioic-acid, O,O-diethyl-S-
 (ethylthio)methyl-ester
 P089-Phosphorothioic-acid, O,O-diethyl-O-
 (p-nitrophenyl)ester
 P040-Phosphorothioic-acid, O,O-diethyl-O-
 pyrazinyl-ester
 P097-Phosphorothioic-acid, O,O-dimethyl-O-(p-
 ((dimethylamino)sulfonyl)phenyl)ester
 P110-Plumbane, tetraethyl-
 P098-Potassium-cyanide
 P099-Potassium-silver-cyanide
 P070-Prepanal, 2-methyl-2-(methylthio)-7-O-
 ((methylamino)carbonyl)oxime
 P101-Prepanenitrile
 P027-Prepanenitrile, 3-chloro-
 P069-Prepanenitrile, 2-hydroxy-2-methyl-
 P081-1,2,3-Prepanetriol, trinitrate--(R)
 P017-1-Prepanone, 1-bromo-
 P102-Prepargyl-alcohol
 P003-2-Prepanal
 P005-2-Prepyn-1-ol
 P067-1,2-Propylenimine
 P102-2-Prepyn-1-ol
 P008-4-Pyridinamine
 P075-Pyridine, (S)-3-(1-methyl-2-pyrroli-
 danyl)-7-and-salts
 P111-Pyrophosphoric-acid, tetraethyl-ester
 P103-Selenourea
 P104-Silver-cyanide
 P105-Sodium-azide
 P106-Sodium-cyanide
 P107-Strontium-sulfide
 P108-Strychnidin-10-one, and-salts
 P018-Strychnidin-10-one, 2,3-dimethoxy-
 P108-Strychnine-and-salts
 P115-Sulfuric-acid, thallium(I)-salt
 P109-Tetraethyldithiopyrophosphate

P110-----Tetraethyl-lead
 P111-----Tetraethylpyrophosphate
 P112-----Tetranitromethane-(R)
 P062-----Tetraphosphoric-acid,-hexaethyl-ester
 P113-----Thallic-oxide
 P113-----Thallium-(iii)-oxide
 P114-----Thallium-(i)-selenite
 P115-----Thallium-(i)-sulfate
 P045-----Thiefanox
 P049-----Thioimidedicarbonic-diamide
 P014-----Thiophenol
 P116-----Thiosemicarbazide
 P026-----Thiourea,-(2-chlorophenyl)-
 P072-----Thiourea,-1-naphthalenyl-
 P093-----Thiourea,-phenyl-
 P123-----Toxaphene
 P118-----Trichloromethanethiol
 P119-----Vanadic-acid,-ammonium-salt
 P120-----Vanadium-pentoxide
 P120-----Vanadium(V)-oxide
 P001-----Warfarin-(when-present-at-concentrations
 greater-than-0.3%)
 P121-----Zinc-cyanide
 P122-----Zinc-phosphide-(R,T)
 P122-----Zinc-phosphide-when-present-at-concentrations
 greater-than-10%

3.4.4.f. The commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products referred to in Sections 3.4.4.a through 3.4.4.d of these regulations, are identified as toxic wastes (T) unless otherwise designated and are subject to the small quantity exclusion defined in Section 10.2.1 of these regulations. These wastes and their corresponding EPA hazardous waste numbers are listed in Table VI of these regulations.

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-EPA-Hazardous-Waste-Numbers-are:

Hazardous Waste-Number	Substance
U001-----	Acetaldehyde-(i)
U034-----	Acetaldehyde,-trichloro-
U187-----	Acetamide,-N-(4-ethoxyphenyl)-
U005-----	Acetamide,-N-9-H-fluoren-2-yl-
U112-----	Acetic-acid,-ethyl-ester-(i)
U144-----	Acetic-acid,-lead-salt
U214-----	Acetic-acid,-thallium(i)-salt
U002-----	Acetone-(i)
U003-----	Acetonitrile-(I,T)
U248-----	3-(alpha-acetonylbenzyl)-4-hydroxycoumarin

and-salts, when-present-at-concentrations
of-0.3% or-less

U004- - - - - Acetophenone
U005- - - - - 2-Acetylaminofluorene
U006- - - - - Acetyl-chloride-(C, R, F)
U007- - - - - Acrylamide
U008- - - - - Acrylic-acid-(i)
U009- - - - - Acrylonitrile
U150- - - - - Alanine, 3-(p-bis(2-chloroethyl)amino)
phenyl-7-L-
U011- - - - - Amitrole
U012- - - - - Aniline-(I, F)
U014- - - - - Auramine
U015- - - - - Azaserine
U010- - - - - Azirine(2',3'+3,4)pyrrole(1,2-a)indole-
4,7-diene, 6-amino-8-((aminocarbonyl)
oxy)methyl)-1,1a,2,8,8a,8b-hexahydro-
8a-methoxy-5-methyl-
U157- - - - - Benz(i)aceanthrylene, 1,2-dihydro-3-
methyl-
U016- - - - - Benz(e)acridine
U016- - - - - 3,4-Benzacridine
U017- - - - - Benzal-chloride
U018- - - - - Benz(a)anthracene
U018- - - - - 1,2-Benzanthracene, 7,12-dimethyl-
U094- - - - - 1,2-Benzanthracene, 7,12-dimethyl-
U012- - - - - Benzenamine-(I, F)
U014- - - - - Benzenamine, 4,4'-carbonimidoylbis(N,N-
dimethyl-
U049- - - - - Benzenamine, 4-chloro-2-methyl
U093- - - - - Benzenamine, N,N'-dimethyl-4-(phenylazo)-
U158- - - - - Benzenamine, 4,4'-methylene-bis(2-chloro)-
U222- - - - - Benzenamine, 2-methyl-7-hydrochloride
U181- - - - - Benzenamine, 2-methyl-5-nitro
U019- - - - - Benzene-(I, F)
U038- - - - - Benzeneacetic-acid, 4-chloro-alpha-(4-
chlorophenyl)-alpha-hydroxy, ethyl-ester
U030- - - - - Benzene, 1-bromo-4-phenoxy-
U037- - - - - Benzene, chloro-
U190- - - - - 1,2-Benzenedicarboxylic-acid-anhydride
U028- - - - - 1,2-Benzenedicarboxylic-acid,
(bis(2-ethyl-hexyl))-ester
U069- - - - - 1,2-Benzenedicarboxylic-acid, dibutyl
ester
U088- - - - - 1,2-Benzenedicarboxylic-acid, diethyl
ester
U102- - - - - 1,2-Benzenedicarboxylic-acid, dimethyl-ester
U107- - - - - 1,2-Benzenedicarboxylic-acid, di-n-octyl-ester
U070- - - - - Benzene, 1,2-dichloro-
U071- - - - - Benzene, 1,3-dichloro-
U072- - - - - Benzene, 1,4-dichloro-
U017- - - - - Benzene, (dichloromethyl)-
U223- - - - - Benzene, 1,3-disocyanatomethyl--(R, F)
U239- - - - - Benzene, dimethyl--(I, F)
U201- - - - - 1,3-Benzenedial
U127- - - - - Benzene, hexachloro-
U056- - - - - Benzene, hexahydro--(I)

U188- - - - - Benzene, -hydroxy-
 U220- - - - - Benzene, -methyl-
 U105- - - - - Benzene, -1-methyl-1,2,4,-dinitro-
 U106- - - - - Benzene, -1-methyl-2,6-dinitro-
 U203- - - - - Benzene, -1,2-methylenedioxy-4-allyl-
 U141- - - - - Benzene, -1,2-methylenedioxy-4-propenyl-
 U090- - - - - Benzene, -1,2-methylenedioxy-4-propyl-
 U055- - - - - Benzene, -(1-methylethyl)--(I)
 U169- - - - - Benzene, -nitro--(I,F)
 U183- - - - - Benzene, -pentachloro-
 U185- - - - - Benzene, -pentachloronitro-
 U020- - - - - Benzenesulfonic acid-chloride-(C,R)
 U020- - - - - Benzenesulfonyl-chloride-(C,R)
 U207- - - - - Benzene, -1,2,4,5-tetrachloro-
 U023- - - - - Benzene, -(trichloromethyl)--(C,R,F)
 U234- - - - - Benzene, -1,3,5-trinitro--(R,F)
 U021- - - - - Benzidine
 U202- - - - - 1,2-Benzisethiazolin-3-one, -1,1-dioxide
 U120- - - - - Benzo(j,k)fluorene
 U022- - - - - Benzo(a)pyrene
 U022- - - - - 3,4-Benzo-pyrene
 U197- - - - - p-Benzoquinone
 U023- - - - - Benzotrichloride-(C,R,F)
 U050- - - - - 1,2-Benzphenanthrene
 U085- - - - - 2,2'-Bioxirane-(I,F)
 U021- - - - - (1,1'-Biphenyl)-4,4'-diamine
 U073- - - - - (1,1'-Biphenyl)-4,4'-diamine,-3,3'-
 dichloro-
 U091- - - - - (1,1'-Biphenyl)-4,4'-diamine,-3,3'-
 dimethoxy-
 U095- - - - - (1,1'-Biphenyl)-4,4'-diamine,-3,3'-
 dimethyl-
 U024- - - - - Bis(2-chloroethoxy)-methane
 U027- - - - - Bis(2-chloroisopropyl)-ether
 U244- - - - - Bis(dimethylthiocarbamoyl)-disulfide
 U028- - - - - Bis(2-ethylhexyl)-phthalate
 U246- - - - - Bromine-cyanide
 U225- - - - - Bromoform
 U030- - - - - 4-Bromophenyl-phenyl-ether
 U128- - - - - 1,3-Butadiene,-1,1,2,3,4,4-hexachloro-
 U172- - - - - 1-Butanamine,-N-butyl-N-nitroso-
 U035- - - - - Butanoic acid,-4-(bis(2-chloroethyl)amino)
 benzene-
 U031- - - - - 1-Butanol-(I)
 U159- - - - - 2-Butanone-(I,F)
 U160- - - - - 2-Butanone-peroxide-(R,F)
 U053- - - - - 2-Butenal
 U074- - - - - 2-Butene,-1,4-dichloro--(I,F)
 U031- - - - - n-Butyl-alcohol-(I)
 U136- - - - - Caecodylic acid
 U032- - - - - Calcium-chromate
 U238- - - - - Carbamic acid,-ethyl-ester
 U178- - - - - Carbamic acid,-methyl-nitroso,-ethyl-ester
 U176- - - - - Carbamide,-N-ethyl-N-nitroso-
 U177- - - - - Carbamide,-N-methyl-N-nitroso-
 U219- - - - - Carbamide,-thio-
 U097- - - - - Carbamoyl-chloride,-dimethyl-

U061- - - - - Dichloro-diphenyl-trichloroethane
 U078- - - - - 1,1-Dichloroethylene
 U079- - - - - 1,2-Dichloroethylene
 U025- - - - - Dichloroethyl-ether
 U081- - - - - 2,4-Dichlorophenol
 U082- - - - - 2,6-Dichlorophenol
 U240- - - - - 2,4-Dichlorophenoxyacetic-acid,-salts-and
 esters
 U083- - - - - 1,2-Dichloropropane
 U084- - - - - 1,3-Dichloropropane
 U085- - - - - 1,2:3,4-Diepoxybutane-(E,F)
 U108- - - - - 1,4-Diethylene-dioxide
 U086- - - - - N,N-Diethylhydrazine
 U087- - - - - O,O-Diethyl-S-methyl-dithiophosphate
 U088- - - - - Diethyl-phthalate
 U089- - - - - Diethylstilbestrol
 U148- - - - - 1,2-Dihydro-3,6-pyridazininedione
 U090- - - - - Dihydrosafrole
 U091- - - - - 3,3'-Dimethoxybenzidine
 U092- - - - - Dimethylamine-(E)
 U093- - - - - Dimethylaminoazobenzene
 U094- - - - - 7,12-Dimethylbenz(a)anthracene
 U095- - - - - 3,3'-Dimethylbenzidine
 U096- - - - - alpha,alpha-Dimethylbenzylhydroperoxide-(R)
 U097- - - - - Dimethylcarbamoyl-chloride
 U098- - - - - 1,1-Dimethylhydrazine
 U099- - - - - 1,2-Dimethylhydrazine
 U101- - - - - 2,4-Dimethylphenol
 U102- - - - - Dimethyl-phthalate
 U103- - - - - Dimethyl-sulfate
 U105- - - - - 2,4-Dinitrotoluene
 U106- - - - - 2,6-Dinitrotoluene
 U107- - - - - Di-n-octyl-phthalate
 U108- - - - - 1,4-Dioxane
 U109- - - - - 1,2-Diphenylhydrazine
 U110- - - - - Dipropylamine-(E)
 U111- - - - - Di-N-propylnitrosamine
 U001- - - - - Ethanal-(E)
 U174- - - - - Ethanamine,-N-ethyl-N-nitroso-
 U067- - - - - Ethane,-1,2-dibromo-
 U076- - - - - Ethane,-1,1-dichloro-
 U077- - - - - Ethane,-1,2-dichloro-
 U114- - - - - 1,2-Ethanediyldibiscarbamedithioic-acid
 U131- - - - - Ethane,-1,1,1,2,2,2-hexachloro-
 U024- - - - - Ethane,-1,1'-(methylenebis(oxy))
 bis(2-chloro-
 U003- - - - - Ethanenitrile-(E,F)
 U117- - - - - Ethane,-1,1'-oxybis--(E)
 U025- - - - - Ethane,-1,1'-oxybis-(2-chloro-
 U184- - - - - Ethane,-pentaachloro-
 U208- - - - - Ethane,-1,1,1,2-tetraachloro-
 U209- - - - - Ethane,-1,1,2,2-tetraachloro-
 U218- - - - - Ethanethioamide
 U227- - - - - Ethane,-1,1,2-trichloro-
 U247- - - - - Ethane,-1,1,1,-trichloro-2,2-bis(p-
 methoxyphenyl)
 U043- - - - - Ethene,-chloro-

U042---Ethene, 1-chloroethoxy-
 U078---Ethene, 1,1-dichloro-
 U079---Ethene, trans-1,2-dichloro-
 U210---Ethene, 1,1,2,2-tetrachloro-
 U173---Ethanol, 2,2'-(nitrosoimino)bis-
 U004---Ethanone, 1-phenyl-
 U006---Ethanoyl chloride-(C,R,F)
 U112---Ethyl acetate-(E)
 U113---Ethyl acrylate-(E)
 U238---Ethyl carbamate-(urethan)
 U038---Ethyl 4,4'-dichlorobenzilate
 U114---Ethylenebis(dithiocarbamic acid)
 U067---Ethylene dibromide
 U077---Ethylene dichloride
 U115---Ethylene oxide
 U116---Ethylene thiourea
 U117---Ethyl ether-(E)
 U076---Ethylidene dichloride
 U118---Ethyl methacrylate
 U119---Ethyl methanesulfonate
 U139---Ferric dextran
 U120---Fluoranthene
 U122---Formaldehyde
 U123---Formic acid-(C,F)
 U124---Furan-(E)
 U125---2-Furanecarboxaldehyde-(E)
 U147---2,5-Furandione
 U213---Furan, tetrahydro--(E)
 U125---Furfural-(E)
 U124---Furfuran-(E)
 U206---D-Glucopyranose, 2-deoxy-2(3-methyl-3-nitrosoureido)-
 U126---Glycidylaldehyde
 U163---Guanidine, N-nitroso-N-methyl-N'-nitro-
 U127---Hexachlorobenzene
 U128---Hexachlorobutadiene
 U129---Hexachlorocyclohexane-(gamma-isomer)
 U130---Hexachlorocyclopentadiene
 U131---Hexachloroethane
 U132---Hexachlorophene
 U243---Hexachloropropene
 U133---Hydrazine-(R,F)
 U086---Hydrazine, 1,2-diethyl-
 U098---Hydrazine, 1,1-dimethyl-
 U099---Hydrazine, 1,2-dimethyl-
 U109---Hydrazine, 1,2-diphenyl-
 U134---Hydrofluoric acid-(C,F)
 U134---Hydrogen fluoride-(C,F)
 U135---Hydrogen sulfide
 U096---Hydroperoxide, 1-methyl-1-phenylethyl--(R)
 U136---Hydroxydimethylarsine oxide
 U116---2-Imidazolidinedithione
 U137---Indeno(1,2,3-cd)pyrene
 U139---Iron dextran
 U140---Isobutyl alcohol-(E,F)
 U141---Isosafrole
 U142---Kerene

6,8,11-trihydroxy-1-methoxy-
 U165-----Naphthalene
 U047-----Naphthalene, 2-chloro-
 U166-----1,4-Naphthalenedione
 U236-----2,7-Naphthalenedisulfonic-acid,
 3,3'-(3,3'-dimethyl-(1,1'-biphenyl)-
 4,4'-diyl)-bis-(azo)bis(5-amino-4-
 hydroxy)-, tetrasodium-salt
 U166-----1,4-Naphthaquinone
 U167-----1-Naphthylamine
 U168-----2-Naphthylamine
 U167-----alpha-Naphthylamine
 U168-----beta-Naphthylamine
 U026-----2-Naphthylamine, -N,N'-bis(2-chloro-
 methyl)-
 U169-----Nitrobenzene-(E,F)
 U170-----p-Nitrophenol
 U171-----2-Nitropropane-(I)
 U172-----N-Nitrosedi-n-butylamine
 U173-----N-Nitrosediethanolamine
 U174-----N-Nitrosediethylamine
 U111-----N-Nitroso-N-propylamine
 U176-----N-Nitroso-N-ethylurea
 U177-----N-Nitroso-N-methylurethane
 U179-----N-Nitrosopiperidine
 U180-----N-Nitrosopyrrolidine
 U181-----5-Nitro-o-toluidine
 U193-----1,2-Oxathiolane, 2,2-dioxide
 U058-----2H-1,3-2-Oxazaphosphorine, 2-(bis(2-
 chloro-ethyl)amino)tetrahydro-, -oxide-2-
 U115-----Oxirane-(E,F)
 U041-----Oxirane, 2-(chloromethyl)-
 U182-----Paraldehyde
 U183-----Pentachlorobenzene
 U184-----Pentachloroethane
 U185-----Pentachloronitrobenzene
 U242-----Pentachlorophenol
 U186-----1,3-Pentadiene-(I)
 U187-----Phenacetin
 U188-----Phenol
 U048-----Phenol, 2-chloro-
 U039-----Phenol, 4-chloro-3-methyl-
 U081-----Phenol, 2,4-dichloro-
 U082-----Phenol, 2,6-dichloro-
 U101-----Phenol, 2,4-dimethyl-
 U170-----Phenol, 4-nitro-
 U242-----Phenol, pentachloro-
 U212-----Phenol, 2,3,4,6-tetrachloro-
 U230-----Phenol, 2,4,5-trichloro-
 U231-----Phenol, 2,4,6-trichloro-
 U137-----1,10-(1,2-Phenylene)pyrene
 U145-----Phosphoric-acid, lead-salt
 U087-----Phosphoredithioic-acid, -)-)-diethyl-, S-
 methyl-ester
 U189-----Phosphorous-sulfide-(R)
 U190-----Phthalic-anhydride
 U191-----2-Picoline

U192-----Prenamide
 U194-----1-Propanamine-(I,F)
 U110-----1-Propanamine,-N-propyl--(I)
 U066-----Propane,1,2-dibromo-3-chloro-
 U149-----Propanedinitrile
 U171-----Propane,2-nitro--(I)
 U027-----Propane,2,2'oxybis-(2-chloro-
 U193-----1,3-Propane-sultone
 U235-----1-Propanol,2,3-dibromo-,phosphate-(3+1)
 U126-----1-Propanol,2,3-epoxy-
 U140-----1-Propanol,2-methyl--(I,F)
 U002-----2-Propanone-(I)
 U007-----2-Propanamide
 U084-----Propene,2,3-dichloro-
 U243-----1-Propene,1,1,2,3,3,3-hexachloro-
 U009-----2-Propenenitrile
 U152-----2-Propenenitrile,2-methyl--(I,F)
 U008-----2-Propenoic-acid-(I)
 U113-----2-Propenoic-acid,-ethyl-ester-(I)
 U118-----2-Propenoic-acid,2-methyl-,ethyl-ester
 U162-----2-Propenoic-acid,2-methyl-,methyl-ester-(I,F)
 U233-----Propionic-acid,2-(2,4,5-trichlorophenoxy)-
 U194-----N-Propylamine-(I,F)
 U083-----Propylene-dichloride
 U196-----Pyridine
 U155-----Pyridine,2-((2-dimethylamino)-2-thenylamino)-
 U179-----Pyridine,-hexahydro-N-nitroso-
 U191-----Pyridine,2-methyl-
 U164-----4(1H)-Pyrimidinone,2,3-dihydro-6-methyl-
 2-thioxo-
 U180-----Pyrene,7-tetrahydro-N-nitroso-
 U200-----Reserpine
 U201-----Resorcinol
 U202-----Saccharin-and-salts
 U203-----Safrole
 U204-----Selenious-acid
 U204-----Selenium-dioxide
 U205-----Selenium-disulfide-(R,F)
 U015-----L-Serine,-diazooacetate-(ester)
 U233-----Silver
 U089-----4,4'-Stilbenediol,-alpha,alpha'-diethyl-
 U206-----Streptozotecin
 U135-----Sulfur-hydride
 U103-----Sulfuric-acid,2-dimethyl-ester
 U189-----Sulfur-phosphide-(R)
 U205-----Sulfur-selenide-(R,F)
 U232-----2,4,5-F
 U207-----1,2,4,5-Tetrachlorobenzene
 U208-----1,1,1,2-Tetrachloroethane
 U209-----1,1,2,2-Tetrachloroethane
 U210-----Tetrachloroethylene
 U212-----2,3,4,6-Tetrachlorophenol
 U213-----Tetrahydrofuran-(I)
 U214-----Thallium-(I)-acetate
 U215-----Thallium-(I)-carbonate
 U216-----Thallium-(I)-chloride
 U217-----Thallium-(I)-nitrate

U218-----Thioacetamide
 U153-----Thiomethanol-(H,T)
 U219-----Thiourea
 U244-----Thiram
 U220-----Toluene
 U221-----Toluenediamine
 U223-----Toluene-diisocyanate-(R,T)
 U222-----O-Toluidine-hydrochloride
 U011-----1H-1,2,4-Triazol-3-amine
 U226-----1,1-Trichloroethane
 U227-----1,1,2-Trichloroethane
 U228-----Trichloroethene
 U228-----Trichloroethylene
 U121-----Trichloromono-fluoromethane
 U230-----2,4,5-Trichlorophenol
 U231-----2,4,6-Trichlorophenol
 U232-----2,4,5-Trichlorophenoxyacetic-acid
 U234-----sym-Trinitrobenzene-(R,T)
 U182-----1,3,5-Trioxane, 2,4,5-trimethyl-
 U235-----Tris(2,3-dibromopropyl)-phosphate
 U236-----Trypan-blue
 U237-----Uracil, -5(bis(2-chloromethyl)amino)-
 U237-----Uracil-mustard
 U043-----Vinyl-chloride
 U248-----Warfarin, -when-present-at-concentrations-of
 0-3%-or-less
 U200-----Yohimban-16-carboxylic-acid, -11,17-di-
 methoxy-18-((3,4,5-trimethoxy-
 benzoyl)oxy)-7-methyl-ester,
 U249-----Zinc-phosphide, -when-present-at
 concentrations-of-10%-or-less

TABLE V

Acute Hazardous Wastes (H)

Hazardous waste no	Chemical abstracts No	Substance
PC23	107-20-0	Acetaldehyde, chloro-
PC02	591-08-2	Acetamide, N-(aminothioxomethyl)-
PG57	640-19-7	Acetamide, 2-fluoro-
PC58	62-74-8	Acetic acid, fluoro-, sodium salt
PC66	16752-77-5	Acetic acid, N-[(methylcarbamoyl)oxy]thio-, methyl ester
PC02	591-08-2	1-Acetyl-2-thiourea
PC03	107-02-8	Acrolein
PC70	116-06-3	Aldcarb
PC04	308-00-2	Aloxin
PC05	107-18-6	Allyl alcohol
PC06	20853-73-8	Aluminum phosphide (R,T)
PC07	2763-96-4	5-(Aminomethyl)-3-isoxazolol
PC08	504-24-5	4-alpha-Aminopyridine
PC09	131-74-8	Ammonium picrate (R)
PI 19	7803-55-6	Ammonium vanadate
PC10	7778-39-4	Arsenic acid
PC12	1327-53-3	Arsenic oxide As ₂ O ₃
PC11	1303-28-2	Arsenic oxide As ₂ O ₅
PC11	1303-28-2	Arsenic pentoxide
PC12	1327-53-3	Arsenic trioxide
PC38	692-42-2	Arsine, diethyl
PC36	696-28-6	Arsinous dichloride, phenyl-
PC54	151-56-4	Azidine
PC13	542-62-1	Barium cyanide
PC24	106-47-6	Benzaniline, 4-chloro-
PC77	100-01-6	Benzaniline, 4-nitro-
PC28	100-44-7	Benzene, (chloromethyl)-
PC42	51-43-4	1,2-Benzenediol, 4-[1-hydroxy-2-(methylaminoethyl)-], (R)-
PC46	122-09-8	Benzeneethanamine, alpha,alpha-dimethyl-
PC14	108-96-5	Benzeneethanol
PC01	181-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, and salts
PC28	100-44-7	Benzyl chloride
PC15	7440-41-7	Beryllium dust
PC16	542-68-1	Bis(chloromethyl) ether
PC17	596-31-2	Bromacetone
PC18	357-57-3	Bruone
PC21	592-01-8	Calcium cyanide
PC22	75-15-0	Carbon bisulfide
PC22	75-15-0	Carbon disulfide
PC95	75-44-6	Carbonic dichloride
PC23	107-20-0	Chloroacetaldehyde
PC24	106-47-6	p-Chloroaniline
PC29	544-92-3	Copper cyanide
PC30		Cyanides (soluble cyanide salts), not otherwise specified
PC31	460-19-5	Cyanogen
PC33	506-77-4	Cyanogen chloride
PC34	131-89-5	2-Cyclohexyl-4,6-dinitrophenol
PC36	696-28-6	Dichlorophenylarsine
PC37	60-57-1	Dieldrin
PC38	692-42-2	Diethylarsine
PC41	311-45-5	Diethyl-p-nitrophenyl phosphate
PC40	297-97-2	O,O-Diethyl O-pyrazinyl phosphorothioate
PC43	55-91-4	Diisopropyl fluorophosphate (DFP)
PC04	309-00-2	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,6,8a-hexahydro-, (1alpha,4alpha,4beta,5alpha,6alpha,8alpha)-
PC60	465-73-6	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,6,8a-hexahydro-, (1alpha,4alpha,4beta,5beta,6beta,8alpha)-
PC37	60-57-1	2,7,3,6-Dimethanonaphth[2,3b]oxirane, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7e-octahydro-, (1aalpha,2beta,2alpha,3alpha,6alpha,6beta,7beta,7aalpha)-
PC51	72-20-8	2,7,3,6-Dimethanonaphth[2,3b]ourane, octahydro-, (1aalpha,2beta,2alpha,3alpha,6alpha,6beta,7beta,7aalpha)-
PC44	60-51-5	Dimethoate
PC45	39196-18-4	3,3-Dimethyl-1-(methylthio)-2-butanone, O-[(methylamino)carbonyl] oxime
PC46	122-09-8	alpha, alpha-Dimethylphenethylamine
PC47	1534-52-1	4,6-Dinitro-o-cresol and salts
PC48	51-28-5	2,4-Dinitrophenol
PC20	88-85-7	Dinoseb
PC85	152-16-9	Diphosphoramidate, octamethyl-
PC39	298-04-4	Disulfoton
PC49	541-53-7	2,4-Dithiocarbonyl
PC50	115-29-7	Endosulfen
PC88	145-73-3	Endothal
PC51	72-20-8	Endrin
PC42	51-43-4	Epinephrine
PI01	107-12-0	Ethyl cyanide
PC54	151-56-4	Ethyleneimine
PC67	52-85-7	Famphur
PC56	7782-41-4	Fluorine
PC57	640-19-7	Fluoroacetamide

TABLE V continued

Acute Hazardous Wastes (H)

Hazardous waste No.	Chemical abstracts No.	Substance
P058	62-74-8	Fluoroacetic acid, sodium salt
P059	626-86-4	Fulmic acid, mercury(2+) salt (R,T)
P059	76-44-8	Heptachlor
P062	757-58-4	Hexaethyltetraphosphate
P116	78-19-8	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
P064	624-83-9	Isocyanic acid, methyl ester
P060	465-73-5	Isodrin
P007	2763-96-4	3(2H)-Imidazolone, 5-(aminomethyl)-
P062	62-38-4	Mercury, (acetato-O)phenyl-
P065	626-86-4	Mercury fulminate (R,T)
P062	62-75-9	Methamine, N-methyl-N-nitroso-
P016	542-85-1	Methane, cybis(chloro-
P112	509-14-8	Methane, tetranitro- (R)
P118	75-70-7	Methanethiol, trichloro-
P050	115-29-7	6,9-Methano-2,4,3-benzodioxathepen, 6,7,8,9,10,10-benzachloro- 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-
P066	16752-77-5	Methyl
P067	75-55-8	2-Methylaziridine
P066	60-34-4	Methyl hydrazine
P064	624-83-9	Methyl isocyanate
P069	75-96-5	2-Methylisocyantrile
P071	298-00-0	Methyl parathion
P072	86-58-4	alpha-Naphthylthiourea
P073	13463-39-3	Nickel carbonyl
P073	13463-39-3	Nickel carbonyl, (T-4)-
P075	154-11-5	Nicotine and salts
P078	10102-43-9	Nitric oxide
P077	100-01-6	p-Nitroaniline
P078	10102-44-0	Nitrogen dioxide
P076	10102-43-9	Nitrogen oxide NO
P076	10102-44-0	Nitrogen oxide NO ₂
P081	55-63-0	Nitrophenol (R)
P082	62-75-9	N-Nitrosodimethylamine
P064	4549-40-0	N-Nitrosodimethylamine
P074	557-19-7	Nickel cyanide
P065	152-16-9	Octamethylpyrophosphoramide
P067	20818-12-0	Osmium oxide
P067	20818-12-0	Osmium tetroxide
P068	145-73-3	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid
P069	56-38-2	Parathion
P034	131-89-5	Phenol, 2-cyclohexyl-4,6-dinitro-
P046	51-28-5	Phenol, 2,4-dinitro-
P047	1534-52-1	Phenol, 2-methyl-4,6-dinitro- and salts
P020	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-
P009	131-74-8	Phenol, 2,4,6-trinitro-, ammonium salt (R)
P022	62-38-4	Phenylmercury acetate
P093	103-85-5	Phenylthiourea
P094	298-02-2	Phosale
P085	75-44-5	Phosgene
P086	7603-51-2	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	60-51-6	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester
P043	55-91-4	Phosphorodithioic acid, bis(1-methylethyl)- ester
P089	56-36-2	Phosphorodithioic acid, O,O-diethyl O-(4-nitrophenyl) ester
P040	297-97-2	Phosphorodithioic acid, O,O-diethyl O-pyrazonyl ester
P097	52-85-7	Phosphorodithioic acid, O-[4-[[dimethylamino)sulfonyl]phenyl] O,O-dimethyl ester
P071	298-00-0	Phosphorodithioic acid, O,O-dimethyl O-(4-nitrophenyl) ester
P110	76-00-2	Plumbene, tetramethyl-
P098	151-30-8	Potassium cyanide
P099	506-61-6	Potassium silver cyanide
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-
P099	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-Propanol
P005	107-18-6	2-Propanol-1-ol
P067	75-55-8	1,2-Propylenimine

TABLE V continued

Acute Hazardous Wastes (H)

Haz. Waste No.	Chemical abstracts No	Substance
P102	591-08-2	2-Propyn-1-ol
P008	504-24-5	Pyridinamine
P015	154-11-5	Pyridine, (5)-3-(1-methyl-2-pyrrolidinyl), and salts
P111	107-49-3	Pyrophosphoric acid, tetraethyl ester
P103	637-10-4	Seleniurea
P104	506-64-9	Silver cyanide
P105	26228-22-8	Sodium azide
P106	143-32-9	Sodium cyanide
P107	1314-96-1	Strontium sulfide
P108	157-24-9	Strychnidin-10-one, and salts
P118	357-57-3	Strychnidin-10-one, 2,3-dimethoxy-
P108	157-24-9	Strychnine and salts
P115	10031-59-1	Sulfuric acid, thallium(I) salt
P109	3689-24-6	Tetraethylthiopyrophosphate
P110	75-00-2	Tetraethyl lead
P111	107-49-3	Tetraethylpyrophosphate
P112	505-14-8	Tetranitromethane (R)
P062	75-58-4	Tetra phosphoric acid, hexaethyl ester
P113	1314-32-5	Thallic oxide
P113	1314-32-5	Thallium(III) oxide
P114	12009-52-0	Thallium(I) selenite
P115	10031-59-1	Thallium(I) sulfate
P109	3685-24-5	Thio phosphoric acid, tetraethyl ester
P045	39196-18-4	Thiofanox
P049	541-53-7	Thioimidocarbonic diamide
P014	106-98-5	Thiophenol
P115	79-19-6	Thiosemicarbazide
P026	5344-82-1	Thiourea, (2-chlorophenyl)-
P072	86-88-4	Thiourea, 1-naphthalenyl-
P093	103-85-5	Thiourea, phenyl-
P120	8001-35-2	Toxaphene
P118	75-70-7	Trichloromethaneethiol
P119	7803-55-6	Vanadic acid, ammonium salt
P120	1314-62-1	Vanadium(V) oxide
P084	4549-40-0	Vinylamine, N-methyl-N-nitroso-
P001	81-81-2	Warfarin
P121	557-21-1	Zinc cyanide
P122	1314-84-7	Zinc phosphide (R T)

* CAS Number given for parent compound only

TABLE VI
Toxic Wastes (T)

Haz- ar/ous waste No.	Chemical abstracts No.	Substance
U001	75-07-6	Acetaldehyde (I)
U004	75-67-6	Acetaldehyde, trichloro-
U187	62-44-2	Acetamide, N-(4-ethoxyphenyl)-
U005	53-96-3	Acetamide, N-9H-fluoren-2-yl
U112	141-78-6	Acetic acid, ethyl ester (I)
U144	301-04-2	Acetic acid, lead salt
U214	563-65-8	Acetic acid, thallium (1+) salt
U232	93-78-5	Acetic acid, (2,4,5-trichlorophenoxy)-
U002	67-64-1	Acetone (I)
U003	75-05-8	Acetonitrile (I,T)
U004	98-96-2	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	Amidole
U012	62-53-3	Aniline (I,T)
U014	492-80-8	Auramine
U015	115-02-6	Azaserone
U010	50-07-7	Azinox(2,3',3,4)pyrrolo[1,2-a]indole-4,7-dione, 6-amino-8-(((aminocarbonyloxy)methyl)-1,1a,2,5,8a,8b-hexahydro-8a-methoxy-5-methyl-
U157	50-43-5	Benz[<i>j</i>]aceanthrylene, 1,2-dihydro-3-methyl-
U016	225-51-4	3,4-Benzacridine
U017	98-87-3	Benzal chloride
U182	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propenyl)
U018	56-55-3	Benz[<i>a</i>]anthracene
U094	57-97-6	Benz[<i>a</i>]anthracene, 7,12-dimethyl-
U012	62-53-3	Benzenamine (I,T)
U014	492-90-8	Benzenamine, 4,4'-carbonimidoylbis(N,N-dimethyl-
U049	3165-93-3	Benzenamine, 4-chloro-2-methyl-
U083	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-
U328	95-53-4	Benzenamine, 2-methyl-
U333	106-49-6	Benzenamine, 4-methyl-
U158	101-14-4	Benzenamine, 4,4'-methylenebis[2-chloro-
U222	636-21-5	Benzenamine, 2-methyl-, hydrochloride
U181	99-56-8	Benzenamine, 2-methyl-5-nitro-
U019	71-43-2	Benzene
U038	510-15-6	Benzenecetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy, ethyl ester
U030	101-55-3	Benzene, 1-bromo-4-phenoxy-
U035	305-03-3	Benzenebutanolic acid, 4-[bis(2-chloroethyl)amino]-
U037	106-90-7	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
U068	84-95-2	1,2-Benzenedicarboxylic acid, diethyl ester
U102	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester
U107	117-84-0	1,2-Benzenedicarboxylic acid, di-n-octyl 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-dichloroethyldiene)bis[4-chloro-
U017	96-87-3	Benzene, (dichloromethyl)-
U223	26471-62-5	Benzene, 1,3-dicyanatomethyl- (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	108-96-3	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- (I,T)
U183	606-93-5	Benzene, pentachloro-
U185	82-98-8	Benzene, pentachloronitro-
U020	96-08-8	Benzenesulfonic acid chloride (C,R)
U020	96-08-8	Benzenesulfonyl chloride (C,R)
U207	95-84-3	Benzene, 1,2,4,5-tetrachloro-
U061	50-29-3	Benzene, 1,1'-(2,2,2-trichloroethyldiene)bis[4-chloro-
U247	72-43-5	Benzene, 1,1'-(2,2,2-trichloroethyldiene)[4-methoxy-
U023	98-07-7	Benzene, (trichloromethyl)- (C,R,T)
U234	99-35-4	Benzene, 1,3,5-trinitro- (R,T)
U021	82-57-5	Benzidine
U202	81-07-2	1,2-Benzisothazol-3-(2H)-one, 1,1-dioxide and salts
U203	94-50-7	1,3-Benzodioxole, 5-(2-propenyl)-
U141	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-

TABLE VI continued

Toxic Wastes (T)

Haz- ardous waste No.	Chemical abstracts No.	Substance
U090	94-55-5	1,3-Benzodioxole, 5-propyl-
U064	189-55-9	Benzo[<i>nat</i>]pentaphene
U022	50-32-8	Benzo[<i>a</i>]pyrene
U197	106-51-4	<i>p</i> -Benzquinone
U023	96-07-7	Benzotrifluoride (C,R,T)
U085	1464-53-5	2,2'-Bioxirane (I,T)
U021	92-87-5	[1,1'-Biphenyl]-4,4'-diamine
U073	91-84-1	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-
U091	119-90-4	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy-
U095	119-83-7	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-
U027	39639-32-9	Bis(2-chloroisopropyl) ether
U024	111-91-1	Bis(2-chloromethoxy) ethane
U026	117-81-7	Bis(2-ethylhexyl) phthalate
U225	75-25-2	Bromoform
U030	101-55-3	4-Bromophenyl phenyl ether
U128	87-88-3	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	1336-23-4	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)-; 2,3,5,7-tetrahydro-1-pyrrokin-1-yl ester, [1S-(1 α)(2),7(2S,3R),7 α (1 α)]]-
U031	71-36-3	<i>n</i> -Butyl alcohol (I)
U136	75-80-5	Carboxylic acid
U032	13765-19-0	Calcium chromate
U238	615-79-5	Carbonic acid, ethyl ester
U178	615-53-2	Carbonic acid, methylnitroso-, ethyl ester
U097	79-44-7	Carbonic chloride, dimethyl-
U114	1111-54-5	Carbomethoic acid, 1,2-ethanediybis-, salts and esters
U062	2903-15-4	Carbomethoic acid, bis(1-methylethyl)-S-(2,3-dichloro-2-propenyl) ester
U215	6533-73-9	Carbonic acid, dithalium(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	12783-03-6	Chlorodane
U026	494-03-1	Chloromethazine
U037	106-90-7	Chlorobenzene
U039	56-50-7	<i>p</i> -Chloro- <i>m</i> -cresol
U041	106-99-8	1-Chloro-2,3-epoxypropane
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	α -Chlorophenol
U049	3165-93-3	4-Chloro- <i>o</i> -toluidine, hydrochloride
U032	13765-19-0	Chromic acid, calcium salt
U050	218-01-9	Crysene
U051	8021-39-4	Cresote
U052	1319-77-3	Cresols (Cresylic acid)
U053	4170-30-3	Crotonaldehyde
U055	99-82-8	Cumene (I)
U246	505-68-3	Cyanogen bromide
U197	106-51-4	2,5-Cyclohexadene-1,4-dione
U056	110-82-7	Cyclohexane (I)
U057	106-94-1	Cyclohexanone (I)
U130	77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-
U058	50-18-0	Cyclophosphamide
U240	194-75-7	2,4-D, salts and esters
U059	20530-61-3	Daunomycin
U060	72-54-8	DDE
U061	50-29-3	DDT
U062	2923-16-4	Diisole
U063	63-70-3	Dibenz[<i>a,h</i>]anthracene
U064	189-55-9	Dibenz[<i>a,i</i>]pyrene
U066	96-12-5	1,2-Dibromo-3-chloropropane
U069	84-74-2	Dibutyl phthalate
U070	95-50-1	<i>o</i> -Dichlorobenzene
U071	541-73-1	<i>m</i> -Dichlorobenzene
U072	106-46-7	<i>p</i> -Dichlorobenzene
U073	91-94-1	3,3'-Dichlorobenzidine
U074	764-41-0	1,4-Dichloro-2-butene (I,T)

TABLE VI continued

Toxic Wastes (T)

Haz- arous waste No.	Chemical abstracts No.	Substance
U075	75-71-8	Dichlorodifluoromethane
U078	75-35-4	1,1-Dichloroethylene
U079	158-60-5	1,2-Dichloroethylene
U025	111-44-1	Dichloroethyl ether
U081	120-83-2	2,4-Dichlorophenol
U082	87-65-0	2,6-Dichlorophenol
U240	94-75-7	2,4-Dichlorophenoxyacetic acid, salts and esters
U083	78-87-5	1,2-Dichloropropane
U064	542-75-8	1,3-Dichloropropane
U065	1464-53-5	1,2,3,4-Diisopropylbutane (I,T)
U106	123-91-1	1,4-Dioxyleneoxide
U086	1615-90-1	N,N-Diethylhydrazine
U067	3288-58-2	O,O-Diethyl-S-methyl-dithiophosphate
U098	84-86-2	Diethyl phthalate
U089	58-53-1	Diethylstilbestrol
U090	94-58-6	Dihydroresorcinol
U091	118-90-4	3,3-Dimethoxybenzidine
U092	124-40-3	Dimethylamine (I)
U093	60-11-7	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	540-73-6	1,2-Dimethylhydrazine
U101	105-67-9	2,4-Dimethylphenol
U102	131-11-3	Diethyl phthalate
U103	77-78-1	Diethyl 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	122-86-7	1,2-Diphenylhydrazine
U110	142-84-7	Dipropylamine (I)
U111	621-84-7	Di-n-propylnitrosamine
U001	75-07-0	Ethanal (I)
U174	55-18-5	Ethanamine, N-ethyl-N-nitroso-
U155	91-80-5	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-42-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-
U164	78-01-7	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
U227	110-80-5	Ethanol, 2-ethoxy-
U359	79-00-5	Ethane, 1,1,2-trichloro-
U173	1116-54-7	Ethanol, 2,2'-(nitrosoamino)bis-
U004	98-86-2	Ethanone, 1-phenyl-
U043	75-01-4	Ethane, chloro-
U042	110-75-8	Ethane, (2-chloroethoxy)-
U078	75-35-4	Ethane, 1,1-dichloro-
U079	158-60-5	Ethane, 1,2-dichloro-, (E)-
U210	127-18-4	Ethane, tetrachloro
U228	79-01-6	Ethane, trichloro
U112	141-78-6	Ethyl acetate (I)
U113	140-88-5	Ethyl acrylate (I)
U208	51-79-6	Ethyl carbamate
U038	510-15-8	Ethyl 4,4-dichlorobenzilate
U114	111-54-8	Ethylenebisdithiocarbamic acid, salts and esters
U007	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	98-45-7	Ethylene thiourea
U117	60-29-7	Ethyl ether (I)
U076	75-34-3	Ethylidene dichloride
U118	97-83-2	Ethyl methacrylate
U119	62-50-0	Ethylmethanesulfonate
U120	206-44-0	Fluoranthene
U122	50-00-0	Formaldehyde
U123	64-18-6	Formic acid (C,T)

TABLE VI continued

Toxic Wastes (T)

Hazardous waste No.	Chemical abstracts No.	Substance
U124	110-00-9	Furan (f)
U125	98-01-1	2-Furoiccarboxaldehyde (f)
U147	108-31-8	2,5-Furandione
U219	109-99-9	Furan, tetrahydro- (f)
U125	98-01-1	Furazal (f)
U124	110-00-9	Furazan (f)
U205	16833-65-4	D-Glucopyranose, 2-deoxy-2(3-methyl-3-nitrosourea)-
U126	765-94-4	Glycidylaldehyde
U163	70-25-7	Guaridine, N-methyl-N'-nitro-N-nitroso-
U127	118-74-1	Hexachlorobenzene
U128	87-68-3	Hexachlorobutadiene
U129	58-85-9	Hexachlorocyclohexane (gamma isomer)
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)
U096	1615-90-1	Hydrazine, 1,2-diethyl-
U096	57-14-7	Hydrazine, 1,1-dimethyl-
U069	540-73-8	Hydrazine, 1,2-dimethyl-
U109	122-65-7	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
U096	80-15-3	Hydroperoxide, 1-methyl-1-phenylethyl- (R)
U138	75-80-5	Hydroxydimethylamine oxide
U116	96-45-7	2-Imidazolidinethione
U137	193-39-5	Indenol 1,2,3cd]pyrene
U139	9004-66-4	Iron dextran
U190	85-44-9	1,3-Isobenzofuranone
U140	78-83-1	Isobutyl alcohol (I,T)
U141	120-58-1	Isotriazole
U142	143-50-0	Keppone
U143	303-94-4	Leucospine
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
U147	108-31-6	Maleic anhydride
U148	123-93-1	Maleic hydrazide
U149	109-77-3	Malononitrile
U150	148-82-3	Mephelan
U151	7439-97-6	Mercury
U152	126-98-7	Methacrylonitrile (I,T)
U092	124-40-3	Methanamine, N-methyl- (f)
U029	74-83-9	Methane, bromo-
U045	74-87-3	Methane, chloro- (I,T)
U046	107-30-2	Methane, chloromethoxy-
U058	74-95-3	Methane, dibromo-
U060	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	67-65-3	Methane, trichloro-
U121	75-09-4	Methane, trichlorofluoro-
U123	64-18-6	Methanoic acid (C,T)
U154	67-56-1	Methanol (f)
U135	91-80-5	Methoxyethane
U142	142-50-0	1,3,4-Methano-2H-cyclobuta[cd]peralen-2-one, 1,1a,3,3a,4,5,5a,5b,6-decachlorooctahydro-
U247	72-43-5	Methoxychlor
U154	67-56-1	Methyl alcohol (f)
U029	74-83-9	Methyl bromide
U188	504-60-9	1-Methylbutadiene (f)
U045	74-87-3	Methyl chloride (I,T)
U156	79-22-1	Methylchlorocarbonite (I,T)
U226	71-55-6	Methylchloroform
U157	56-49-5	3-Methylcholanthrene
U158	101-14-4	4,4'-Methylenebis(2-chloroaniline)
U068	74-85-3	Methylene bromide
U060	75-09-2	Methylene chloride
U159	78-93-3	Methyl ethyl ketone (MEK) (I,T)
U180	1338-23-4	Methyl ethyl ketone peroxide (R,T)

TABLE VI continued

Toxic Wastes (T)

Haz. arduous waste No	Chemical abstracts No.	Substance
U138	74-88-4	Methyl iodide
U161	106-10-1	Methyl isobutyl ketone (I)
U162	80-62-6	Methyl methacrylate (I,T)
U163	70-25-7	N-Methyl-N-nitro-N-nitrosoguanidine
U161	108-10-1	4-Methyl-2-pentanone (I)
U164	56-04-2	Methylthioureasil
U010	50-07-7	Micronyx C
U059	20630-81-3	5,12-Naphthacenedione, (8S-cis)-8-acetyl-10-[[[3-amino-2,3,6-trideoxy]-alpha-L-xylo-hexopyranocyl]oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-
U165	91-20-3	Naphthalene
U047	91-58-7	Naphthalene, 2-chloro-
U166	130-15-4	1,4-Naphthoquinone
U235	72-57-1	2,7-Naphthoquinonesulfonic acid, 3,3'-[[[3,3'-dimethyl-(1,1'-biphenyl)-4,4'-diyl]]-bis(azo)bis(5-amino-4-hydroxy)-, tetrasodium salt
U166	130-15-4	1,4-Naphthoquinone
U167	134-32-7	alpha-Naphthylamine
U168	91-59-8	beta-Naphthylamine
U026	494-03-1	2-Naphthylamine, N,N'-bis(2-chloromethyl)-
U167	134-32-7	1-Naphthylamine
U168	91-59-8	2-Naphthylamine
U217	10102-45-1	Nitric acid, lithium(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-Nitrosodibutylamine
U174	55-18-5	N-Nitrosodimethylamine
U176	759-73-9	N-Nitroso-N-methylurea
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-Oxathiolene, 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	Oxirane-carbonyldehyde
U041	106-89-8	Oxirane, (chloromethyl)-
U182	123-63-7	Paraaldehyde
U183	606-93-5	Pentachlorobenzene
U184	76-01-7	Pentachloroethane
U185	82-68-8	Pentachloronitrobenzene (PCNB)
U242	87-86-5	Pentachlorophenol
U186	504-60-9	1,3-Pentadiene (I)
U187	62-44-2	Phenacetin
U188	106-95-2	Phenol
U048	95-57-8	Phenol, 2-chloro-
U039	59-50-7	Phenol, 4-chloro-3-methyl-
U061	120-83-2	Phenol, 2,4-dichloro-
U082	87-65-0	Phenol, 2,6-dichloro-
U089	56-59-1	Phenol, 4,4'-[(1,2-dimethyl-1,2-ethenediyl)bis-, (E)-
U101	105-57-9	Phenol, 2,4-dimethyl-
U052	1319-77-3	Phenol, methyl-
U132	70-30-4	Phenol, 2,2'-methylenebis[3,4,6-trichloro-
U170	100-02-7	Phenol, 4-nitro-
U242	87-86-5	Phenol, pentachloro-
U212	58-90-2	Phenol, 2,3,4,5-tetrachloro-
U230	95-94-4	Phenol, 2,4,5-trichloro-
U231	68-06-2	Phenol, 2,4,6-trichloro-
U150	145-82-3	L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-
U145	7446-27-7	Phosphonic acid, lead salt
U067	3285-58-2	Phosphorodithioic acid, O,O-diethyl-, S-methyl-, ester
U189	106-95-2	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-
U149	109-77-3	Propanedinitrile
U171	79-46-9	Propane, 2-nitro- (I,T)
U027	39638-32-9	Propane, 2,2'-oxybis[2-chloro-
U193	1120-71-4	1,3-Propane sulfone
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)

TABLE VI continued

Toxic Wastes (T)

Haz- ardous waste No.	Chemical abstracts No.	Substance
U084	542-75-6	1-Propane, 1,3-dichloro-
U152	126-98-7	2-Propanenitrile, 2-methyl-, (I,T)
U007	79-06-1	2-Propanamide
U243	1888-71-7	1-Propane, hexachloro-
U008	107-13-1	2-Propanenitrile
U008	79-10-7	2-Propenoic acid (I)
U113	140-88-5	2-Propenoic acid, ethyl ester (I)
U118	97-83-2	2-Propenoic acid, 2-methyl-, ethyl ester
U152	80-66-2	2-Propenoic acid, 2-methyl-, methyl ester (I,T)
U233	93-72-1	Propionic acid, 2-(2,4,5-trichlorophenoxy)-
U194	107-10-8	n-Propylamine (I,T)
U063	78-87-5	Propylene dichloride
U148	123-33-1	3,6-Pyridazine-dione, 1,2-dihydro-
U106	110-86-1	Pyridine
U191	109-06-8	Pyridine, 2-methyl-
U237	68-75-1	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	Pyrimidine, 1-nitroso-
U200	50-55-5	Reserpine
U201	108-46-3	Resorcinol
U202	81-07-2	Saccharin and salts
U203	94-59-7	Safrole
U204	7783-00-8	Selenious acid
U204	7783-00-8	Selenium dioxide
U205	7446-34-6	Selenium sulfide (R,T)
U015	115-02-6	L-Senne, diacacetate (ester)
U233	93-72-1	Sivex
U206	18883-86-4	Streptozotocin
U103	77-78-1	Sulfuric acid, dimethyl ester
U189	1314-80-3	Sulfur phosphide (R)
U232	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
U212	58-90-2	2,3,4,6-Tetrachlorophenol
U213	109-99-9	Tetrahydrofuran (I)
U214	15843-14-8	Thallium(I) acetate
U215	6533-73-9	Thallium(I) carbonate
U216	7791-12-0	Thallium chloride
U217	10102-45-1	Thallium(I) nitrate
U218	62-55-5	Thioacetamide
U153	74-93-1	Thiomethanol (I,T)
U244	137-26-8	Thioperoxydicarbonyl diamide, tetramethyl-
U219	62-56-6	Thiourea
U244	137-26-8	Thiourea
U220	106-88-3	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
U011	61-82-5	1H-1,2,4-Thiazol-3-amine
U226	71-55-8	1,1,1-Trichloroethane
U227	79-00-5	1,1,2-Trichloroethane
U228	79-01-6	Trichloroethylene
U121	75-69-4	Trichloromonofluoromethane
U230	95-95-4	2,4,5-Trichlorophenol
U231	88-06-2	2,4,6-Trichlorophenol
U234	99-35-4	sym-Tri-tolobenzene (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	81-81-2	Warfarin, 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-trimethoxybenzoyloxy)-], methyl ester
U249	1314-84-7	Zinc phosphide, when present at concentrations of 10% or less

¹ CAS Number given for parent compound only.

§47-35-4. Notification of Hazardous Waste Activity Regulations.

4.1. General.

~~4-4-a~~ 4.1.1. Applicability. Any person that engages in a hazardous waste activity in the State of West Virginia shall notify the chief of these activities, unless such activities are exempted from the requirements of these regulations.

~~4-4-b~~ 4.1.2. Any person as described in ~~Section 4-4-a~~ Section 4.1.1 of these regulations that has notified the EPA or is subject to the requirements to notify EPA as specified in Volume 45, Number 39 of the Federal Register, dated February 26, 1980, pages 12746 through 12754 is subject to the provisions of Section 4 of these regulations.

~~4-4-c~~ 4.1.3. The purpose of Section 4 of these regulations is to provide a means for the State of West Virginia to utilize the information provided by all who complied with the notification requirements of EPA as described in ~~Section 4-4-b~~ Section 4.1.2 of these regulations and to assure that all persons who did not notify EPA as described in ~~Section 4-4-b~~ Section 4.1.2 of these regulations or all who initiated hazardous waste activities subsequent to the requirements of EPA as referenced above in ~~Section 4-4-b~~ Section 4.1.2 of these regulations, shall notify the chief of their hazardous waste activities.

4.2. Notification.

~~4-2-a~~ 4.2.1. Any person that notified EPA of hazardous waste activities as referenced above in Section 4.1 of these regulations shall provide a copy of that notification to the chief within thirty (30) days of the effective date of these regulations.

~~4-2-b~~ 4.2.2. Any person involved in hazardous waste activities that did not comply with the notification requirements of EPA, as referenced above in Section 4.1 of these regulations, but is subject to those requirements shall notify the chief in writing of their hazardous waste activities within thirty (30) days of the effective date of these regulations. Notification may be accomplished by the use of EPA Form 8700-12 or the provision of the same information in any other manner selected by the notifier.

~~4-2-c~~ 4.2.3. Any person exempted from the federal notification requirements but subject to West Virginia notification requirements as specified in ~~Sections 3-4-5~~ Sections 3.1.6 and 10 of these regulations shall notify the chief in writing of their hazardous waste activities within ninety (90) days of the effective date of these regulations or the date of initiation of such activities, whichever is later. Notification may be accomplished by use of EPA Form 8700-12 or the provision of the same information in any other manner selected by the notifier.

~~4-2-d~~ 4.2.4. One notification form is required for each generator.

~~4-2-e~~ 4.2.5. A notification form is required for each storage, treatment, disposal, or other facility. However, if one facility site includes more than one storage, treatment, or disposal activity, only

one notification form for the entire facility site is required.

~~4.2-f~~ 4.2.6. Generators that store, treat, or dispose of hazardous waste on-site shall file a notification form for generation activities as well as storage, and treatment and disposal activities, unless such activities are exempted from the requirements of these regulations.

~~4.2-g~~ 4.2.7. New generators and those initiating activities subsequent to EPA notification period referenced in ~~Section 4.1.2~~ Section 4.1.2 of these regulations shall comply with the EPA identification number requirements and shall provide a copy of their application for an EPA identification number to the chief.

§47-35-5. Standards Applicable to Transporters of Hazardous Waste by Air or Water or Both.

5.1. The director hereby adopts and incorporates by reference 40 C.F.R. Part 263, as published in the Code of Federal Regulations on the effective date specified in ~~Section 1.5~~ Section 1.5 of these regulations, insofar as such regulations relate to the transportation of hazardous waste by air and water.

5.2. Whenever the term Administrator or Regional Administrator is used, the term shall have the meaning of the director of the Department of Natural Resources.

§47-35-6. Standards Applicable to Generators of Hazardous Waste.

6.1. Purpose, Scope, and Applicability.

~~6.1-a-This section establishes standards and regulations for generators of hazardous wastes.~~

6.1.1. General.

~~6.1-a-1~~ 6.1.1.a. Generators that generate more than one hundred (100) kilograms of hazardous waste, identified or listed in Section 3 of these regulations, in any calendar month or who generate acutely hazardous waste in quantities greater than the amounts listed in Section 10.1.5 of these regulations are subject to all sections of these regulations, except as otherwise provided in Sections 6 and 10.1 of these regulations.

~~6.1-b~~ 6.1.1.b. A generator who treats, stores, or disposes of hazardous waste on-site must only comply with the following subsections of ~~this Section~~ Section 6 of these regulations with respect to that waste: ~~Section 6.1.2~~ Section 6.1.2 of these regulations for determining whether his waste is hazardous; ~~Section 6.1.3~~ Section 6.1.3 of these regulations for obtaining an EPA identification number; Sections 6.4.1.c and 6.4.1.d of these regulations for record keeping; Section 6.4.4 of these regulations for additional reporting; and, if applicable, Section 6.5.2 of these regulations for farmers; and Section 6.3.5 of these regulations for accumulation of hazardous waste.

~~6.1-c~~ 6.1.1.c. Any person who imports hazardous waste into West Virginia shall comply with the standards applicable to generators established in ~~this section~~ Section 6 of these regulations.

~~6-4-d-~~ 6.1.1.d. A farmer who generates waste pesticides which are hazardous wastes and who complies with all the requirements of Section 6.5.2 of these regulations is not required to comply with the remainder of these regulations with respect to such pesticides.

~~6-4-e-~~ 6.1.1.e. A person who generates a hazardous waste, as defined in Section 3 of these regulations is subject to the compliance requirements and penalties prescribed in Sections 14, 15, and 16 of the Hazardous Waste Management Act if he does not comply with the requirements of ~~this-section~~ Section 6 of these regulations.

~~6-4-f-~~ 6.1.1.f. 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-section~~ Section 6 of these regulations.

~~6-4-4-~~ 6.1.2. Hazardous Waste Determination.

A person who generates a waste, as defined in ~~Section--3-4-4~~ Section 3.1.2 of these regulations, shall determine if that waste is a hazardous waste using the following method:

~~6-4-4-a-~~ 6.1.2.a. He shall first determine if the waste is excluded from regulation under ~~Section-3-4-3~~ Section 3.1.4 of these regulations.

~~6-4-4-b-~~ 6.1.2.b. He shall then determine if the waste is listed as hazardous waste in Section 3.4 of these regulations.

Note: Even if the waste is listed, the generator still has an opportunity under 40 C.F.R. §260.22 of the federal regulations to demonstrate that the waste from his particular facility or operation is not a hazardous waste.

~~6-4-4-c-~~ 6.1.2.c. If the waste is not listed as a hazardous waste in Section 3.4 of these regulations, the generator shall determine whether the waste is identified in Section 3.3 of these regulations by either:

~~6-4-4-c-1-~~ 6.1.2.c.1. Testing the waste according to the methods set forth in Section 3.3 of these regulations, or according to an equivalent method; or

~~6-4-4-c-2-~~ 6.1.2.c.2. Applying knowledge of the hazard characteristics of the waste in light of the materials or the processes used.

~~6-4-4-d-~~ 6.1.2.d. Generator may elect to voluntarily declare his wastes as hazardous and subject to these regulations.

~~6-4-2-~~ 6.1.3. EPA Identification Numbers.

~~6-4-2-a-~~ 6.1.3.a. A generator shall not treat, store, dispose of, transport, or offer for transportation, hazardous waste without having received an EPA identification number from the Administrator.

~~6-4-2-b-~~ 6.1.3.b. A generator who has not received an EPA identification number may obtain one by applying to the Administrator using EPA Form 8700-12. Upon receiving the request, the Administrator will assign an EPA identification number to the generator.

~~6.1.2.e.~~ 6.1.3.c. A generator shall not offer his hazardous waste to transporters or to treatment, storage, or disposal facilities that have not received an EPA identification number.

6.2. The Manifest.

6.2.1. General Requirements.

6.2.1.a. A generator who transports, or offers for transportation, hazardous waste for off-site treatment, storage, or disposal must prepare a manifest, OMB control number 2000-0404 on EPA form 8700-22, and, if necessary, EPA form 8700-22A, according to the requirements adopted in Appendix IX of these regulations.

6.2.1.b. A generator must designate on the manifest one facility which is permitted to handle the waste described on the manifest.

6.2.1.c. Beginning on September 1, 1985, and thereafter, generators shall insert on the manifest, at item 16 "Generator Certification", in addition to the certification which already exists at item 16, the following waste minimization certification:

"Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002(b) of RCRA, I also certify that 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 method of treatment, storage or disposal currently available to me which minimizes the present and future threat to human health and the environment."

6.2.1.d. 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.

6.2.1.e. 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.

6.2.2. Acquisition of Manifest.

6.2.2.a. If the state to which the shipment is manifested (consignment state) supplies the manifest and requires its use, then the generator must use that manifest.

6.2.2.b. If the consignment state does not supply the manifest, but the state in which the generator is located (generator state) supplies the manifest and requires its use, then the generator must use the state's manifest.

6.2.2.c. If neither the generator state nor the consignment state supplies the manifest, then the generator may obtain the manifest from any source.

6.2.3. Number of Copies.

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 for their records and another copy to be returned to the generator.

6.2.4. Use of the Manifest.

6.2.4.a. The generator must:

6.2.4.a.1. Sign the manifest certification by hand, and

6.2.4.a.2. Obtain the handwritten signature of the initial transporter and date of acceptance on the manifest; and

6.2.4.a.3. Retain one copy, in accordance with Section 6.4.1.a of these regulations.

6.2.4.b. The generator must give the transporter remaining copies of the manifest.

6.2.4.c. 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 section~~ Section 6.2 of these regulations 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.

6.2.4.d. 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 Section 6 of these regulations to:

~~6.2.4.d.i.~~ 6.2.4.d.1. The next non-rail transporter, if any; or

~~6.2.4.d.ii.~~ 6.2.4.d.2. The designated facility if transported solely by rail; or

~~6.2.4.d.iii.~~ 6.2.4.d.3. The last rail transporter to handle the waste in the United States if exported by rail.

6.3. Pre-Transport Requirements.

6.3.1. Packaging. Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator shall package the waste in accordance with the applicable Department-of-Transportation ~~(DOT)~~ DOT regulations on packaging under 49 C.F.R. Parts 173, 178, and 179.

6.3.2. Labeling. Before transporting or offering hazardous waste for transportation off-site, a generator shall package the waste in accordance with the applicable Department-of-Transportation--~~(DOT)~~ DOT regulations on packaging under 49 C.F.R. Part 172.

6.3.3. Marking.

6.3.3.a. Before transporting or offering hazardous waste for

transportation off-site, a generator shall mark each package of hazardous waste in accordance with the applicable Department-of-Transportation DOT regulation on hazardous materials under 49 C.F.R. Part 172;

6.3.3.b. Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator shall mark each container of 110 gallons or less used in such transportation with the following words and information displayed in accordance with the requirements of 49 C.F.R. §172.304: "HAZARDOUS WASTE" - Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.

Generator's name and address _____.

Manifest document number _____.

6.3.4. Placarding. Before transporting hazardous waste or offering hazardous waste for transportation off-site, the generator shall placard or offer the initial transporter the appropriate placards according to Department-of-Transportation DOT regulations for hazardous materials under Subpart F of 49 C.F.R. Part 172.

6.3.5. Accumulation Time.

~~6.3.5.a. A generator may accumulate hazardous waste on-site for ninety (90) days or less without a permit or without having interim status, provided that:~~

~~6.3.5.a.1. The waste is placed either in containers which meet the standards of Section 6.3.4 of these regulations and are managed in accordance with 40 C.F.R. Part 265, Subpart I, or in tanks, and the generator complies with Subpart J of 40 C.F.R. Part 265 except 40 C.F.R. Section 265.193;~~

6.3.5.a. Except as provided in Sections 10.1.3 through 10.1.5 of these regulations, a generator may accumulate hazardous waste on-site for ninety (90) days or less without a permit or without having interim status provided that:

6.3.5.a.1. The waste is placed in containers and the generator complies with Subpart I of 40 C.F.R. Part 265, or the waste is placed in tanks and the generator complies with Subpart J of 40 C.F.R. Part 265 (excluding 40 C.F.R. §§265.197(c) and 265.200). In addition, such a generator is exempt from all the requirements in Subparts G and H of 40 C.F.R. Part 265 (except for 40 C.F.R. §§265.111 and 265.114).

6.3.5.a.2. The date upon which each period of accumulation begins is clearly marked and visible for inspection on each container.

6.3.5.a.3. Each container is properly labeled and marked according to Sections 6.3.2 and 6.3.3 of these regulations;

6.3.5.a.4. While being accumulated, on site, each container and tank is labeled or marked clearly with the words "Hazardous Waste"; and

6.3.5.a.5. The generator complies with the requirements for owners or operators in Subparts C and D of 40 C.F.R. Part 265 and with 40 C.F.R.

§265.16;

6.3.5.b. A generator who accumulates hazardous waste for more than ninety (90) days is an operator of a storage facility and is subject to the applicable requirements of Sections 4, 8, and 12 of these regulations, the permit requirements of Section 11 of these regulations and 40 C.F.R. Part 265 unless he has been granted an extension to the ninety (90) day period. Such an extension may be granted by the chief if hazardous wastes must remain on-site for longer than ninety (90) days due to unforeseen, temporary, and uncontrollable circumstances. An extension of up to thirty (30) days may be granted at the discretion of the chief on a case-by-case basis. Before the end of ninety (90) days, or any extension period granted by the chief (not to exceed thirty days), the generator must either transport all such hazardous waste off-site to a designated facility, or, if held on-site for more than ninety (90) days, place such hazardous waste in an on-site facility that is either permitted under Section 11 of these regulations or under 40 C.F.R. Part 270 or which has interim status or which is authorized to manage hazardous waste by a state with a hazardous waste program approved by EPA.

6.3.5.c. Satellite Area Accumulation.

6.3.5.c.1. A generator may accumulate as much as fifty-five (55) gallons of hazardous waste or one quart of acutely hazardous waste listed in Section 3.4.4.e of these regulations 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 Section 6.3.5.a of these regulations, provided he:

~~6.3.5.c.1.i~~ 6.3.5.c.1.A. Complies with 40 C.F.R. §§265.171, 265.172, and 265.173(a); and

~~6.3.5.c.1.ii~~ 6.3.1.c.1.B. Marks the containers either with the words "Hazardous Waste" or with other words that identify the contents of the containers.

6.3.5.c.2. A generator who accumulates either hazardous waste or acutely hazardous waste listed in Section 3.4.4.e of these regulations in excess of the amounts listed in Section 6.3.5.c.1 of these regulations at or near any point of generation must, with respect to that amount of excess waste, comply within three (3) days with Section 6.3.5.a of these regulations or other applicable provisions of these regulations. During the 3-day period, the generator must continue to comply with Sections 6.3.5.c.1 of these regulations. The generator must mark each container holding the excess accumulation of hazardous waste with the date the excess amount of hazardous waste began accumulating.

6.4. Record Keeping and Reporting.

6.4.1. Record Keeping.

6.4.1.a. A generator shall keep a copy of each manifest signed in accordance with Section 6.2.4.a of these regulations 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.

6.4.1.b. A generator shall 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.

6.4.1.c. A generator shall keep records of any test results, waste analyses, or other determinations made in accordance with ~~Section 6.4.4~~ Section 6.1.2 of these regulations for at least three years from the date that the waste was last sent to on-site or off-site treatment, storage, or disposal.

6.4.1.d. The periods of retention referred to in ~~this section~~ Section 6.4 of these regulations are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the chief or director.

6.4.2. Annual Reporting.

6.4.2.a. A generator who ships hazardous waste off-site shall submit an annual report to the chief on a form prescribed by him, no later than March 1 for the preceding calendar year. Such report must include, at least, the following information:

6.4.2.a.1. The EPA identification number, name, and address of the generator;

6.4.2.a.2. The calendar year covered by the report;

6.4.2.a.3. The EPA identification number, name, and address for each off-site treatment, storage, or disposal facility to which waste was shipped during the year; for exported shipments, the report must give the name and address of the foreign facility.

6.4.2.a.4. The name and EPA identification number of each transporter used during the reporting year.

6.4.2.a.5. A description, EPA hazardous waste number, (~~from 40-C.F.R. Part 261, Subpart 6 or D~~) DOT hazard class, and quantity of each hazardous waste shipped off-site. This information must be listed by EPA identification number of each off-site facility to which waste was shipped.

6.4.2.a.6. A description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated.

6.4.2.a.7. 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.

6.4.2.a.8. The certification signed by the generator or authorized representative.

6.4.2.b. Any generator who treats, stores, or disposes of hazardous waste on-site shall submit an annual report covering those wastes in

accordance with the provisions of Sections 8 and 11 of these regulations and 40 C.F.R. Part 265.

6.4.3. Exception Reporting.

6.4.3.a. A generator who does not receive a copy of the manifest with the handwritten signature of the owner or operator of the facility within thirty five (35) days of the date the waste was accepted by the initial transporter shall contact the transporter or the owner or operator of the designated facility, or both, to determine the status of the hazardous waste.

6.4.3.b. A generator shall submit an exception report to the chief if he has not received a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within forty-five (45) days of the date the waste was accepted by the initial transporter. The exception report must include:

6.4.3.b.1. A legible copy of the manifest for which the generator does not have confirmation of delivery.

6.4.3.b.2. 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.

6.4.3.b.3. In case of interstate shipments which originated in the state for delivery to a designated facility in another state, an additional copy of the exception report will be provided to the chief for transmittal to that state or EPA as provided for in 40 C.F.R. §271.128(b)(8).

6.4.4. Additional Reporting.

The chief, as he deems necessary, may require generators to furnish additional reports concerning the quantities and disposition of hazardous wastes identified or listed in Section 3 of these regulations.

6.5. Special Conditions.

6.5.1. International Shipments.

6.5.1.a. Any person who exports hazardous waste to a foreign country or imports hazardous waste from a foreign country into West Virginia shall comply with 40 C.F.R Part 262 and Section 6.5 of these regulations.

6.5.1.b. When shipping hazardous waste outside the United States the generator shall:

6.5.1.b.1. Notify the chief and the EPA administrator in writing four weeks before the initial shipment of hazardous waste to each country in each calendar year. The waste shall be identified by its EPA hazardous waste identification number and its ~~Department-of-Transportation~~ DOT shipping description. The name and address of the foreign consignee shall be included in the notice.

6.5.1.b.2. Send the original of the notice to Office of International

Activities (A-106), U.S. Environmental Protection Agency, Washington, D.C. 20460, and one copy to the chief.

6.5.1.b.3. Require that the foreign consignee conform the delivery of the waste in the foreign country. A copy of the manifest, signed by the foreign consignee, may be used for this purpose.

6.5.1.b.4. Meet the requirements under Section 6.2.2 of these regulations for the manifest, except that:

~~6.5.1.b.4.iii~~ 6.5.1.b.4.A. In place of the name, address, and EPA identification number of the designated facility, the name and address of the foreign consignee shall be used;

~~6.5.1.b.4.iii~~ 6.5.1.b.4.B. The generator shall identify the point of departure from the United States through which the waste shall travel before entering a foreign country.

6.5.1.c. A generator shall file an exception report, if:

6.5.1.c.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; or

6.5.1.c.2. Within ninety (90) days from the date the waste was accepted by the initial transporter, the generator has not received written confirmation from the foreign consignee that the hazardous waste was received.

6.5.1.d. When importing hazardous waste, a person shall meet all requirements of Section 6.2.2 of these regulations for the manifest except that:

6.5.1.d.1. 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 shall be used.

6.5.1.d.2. In place of the generator's signature on the certification statement, the U.S. importer or his agent shall sign and date the certification and obtain the signature of the initial transporter.

6.5.2. Farmers.

A farmer disposing of waste pesticides from his own use which are hazardous wastes is not required to comply with the standards in ~~this section~~ Section 6 of these regulations or other standards in Section 8, 11, or 12 of these regulations, or 40 C.F.R. Part 265, for those wastes, provided he triple rinses each emptied pesticide container in accordance with ~~Section 3.1.7.e~~ Section 3.1.7.e of these regulations and disposes of the pesticide residues on his own farm in a manner consistent with the disposal instructions on the pesticide label.

§47-35-7. (Reserved).

§47-35-8. Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.

8.1. General Purpose, Scope, and Applicability.

8.1.1. The purpose of Section 8 of these regulations is to establish minimum standards which define the acceptable management of hazardous waste.

8.1.2. The standards in ~~this section~~ Section 8 of these regulations apply to owners and operators of all facilities which treat, store, or dispose of hazardous waste except as Section 8.1.5 of these regulations provides otherwise. ~~In addition to the standards in this section, the regulations of the Air Pollution Control Commission, Series 25, "To Prevent and Control Air Pollution from Hazardous Waste Treatment, Storage or Disposal Facilities,"~~ In addition to the standards in Section 8 of these regulations, West Virginia Administrative Regulations, Air Pollution Control Commission, Series 25 apply to management facilities which may emit hazardous waste or the constituents thereof to the atmosphere including incineration facilities except as Section 8.1.5 of these regulations provides otherwise. For purposes of Section 8 of these regulations, the following persons are considered to be incinerating hazardous waste:

8.1.2.a. Owners or operators of hazardous waste incinerators as defined in Section 2 of these regulations; and

8.1.2.b. Owners or operators of boilers or industrial furnaces used to destroy the wastes.

8.1.3. The requirements of ~~this section~~ Section 8 of these regulations apply to a person disposing of hazardous waste by means of underground injection only to the extent that they are required to comply with certain portions of ~~this section~~ Section 8 of these regulations under the underground injection control program establish pursuant to the Water Pollution Control Act, W. Va. Code §20-5A.

8.1.4. The requirements of ~~this section~~ Section 8 of these regulations 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 hazardous waste management permit by rule granted to such a person under Section 11.8.

8.1.5. The requirements of ~~this section~~ Section 8 of these regulations do not apply to:

8.1.5.a. The owner or operator of a facility managing recyclable materials described in ~~Sections 3.4.5.a.2 and 3.4.5.a.3~~ Sections 3.1.6.b and 3.1.6.c of these regulations (except in cases or situations in which the requirements of Section 3 of these regulations are referred to in Section 9 of these regulations).

8.1.5.b. Generator accumulating waste on site in compliance with Section 6.3.5 of these regulations provided the applicable requirements of ~~Sections 3.4.4 and 3.4.5~~ Sections 3.1.6 and 10 of these regulations are complied with.

8.1.5.c. A farmer disposing of waste pesticides from his own use in compliance with Section 6.5.2 of these regulations.

8.1.5.d. The owner or operator of a totally enclosed treatment facility, as defined in Section 2 of these regulations.

8.1.5.e. The owner or operator of an elementary neutralization unit or a wastewater treatment unit as defined in Section 2 of these regulations.

8.1.5.f. A transporter storing manifested shipments of hazardous waste in containers meeting the requirements of Section 6.3.1 of these regulations, at a transfer facility for a period of ten (10) days or less.

8.1.5.g. Except as provided in Section 8.1.5.g.2 of these regulations, a person engaged in treatment or containment activities during immediate response to any of the following situations:

~~8.4.5.g.1.i~~ 8.1.5.g.1.A. A discharge of a hazardous waste;

~~8.4.5.g.1.ii~~ 8.1.5.g.1.B. An imminent and substantial threat of a discharge of hazardous waste;

~~8.4.5.g.1.iii~~ 8.1.5.g.1.C. A discharge of a material which, when discharged, becomes a hazardous waste.

8.1.5.g.2. An owner or operator of a facility otherwise regulated by this subsection must comply with all applicable requirements of Sections 8.3 and 8.4 of these regulations.

8.1.5.g.3. Any person who is covered by Section 8.1.5.g.1 of these regulations and who continues or initiates hazardous waste treatment or containment activities after the immediate response is over is subject to all applicable requirements of the State Act.

8.1.5.h. The addition of absorbent material to hazardous waste in a container or the addition of hazardous waste to absorbent material in a container, provided that these actions occur at the time hazardous waste is first placed in the container and Sections 8.2.8.b, 8.7.2 and 8.7.3 of these regulations are complied with.

8.1.6. Relation to Interim Status Standards.

A facility owner or operator shall comply with the requirements of Section 10 of the State Act and the corresponding federal requirements of Subpart G of 40 C.F.R. Part 270 and 40 C.F.R. Part 265 in lieu of the regulations of ~~this-section~~ Section 8 of these regulations until final administrative disposition of the permit application is made, except as otherwise noted in these regulations.

8.1.7. Imminent Hazard Section.

Notwithstanding any other provisions of these regulations, enforcement actions may be brought pursuant to Section 17 of the State Act.

8.2. General Facility Standards.

8.2.1. Applicability.

The regulations in ~~this-section~~ Section 8.2 of these regulations apply to owners and operators of all hazardous waste facilities, except as provided in Section 8.1 of these regulations.

8.2.2. Identification Number.

Every facility owner or operator must apply to EPA for an EPA identification number in accordance with the EPA notification procedures.

8.2.3. Required Notices.

8.2.3.a. The owner or operator of a facility that has arranged to receive hazardous waste from a foreign source must notify the chief in writing at least four (4) 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 foreign source is not required.

8.2.3.b. 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 the facility 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.

8.2.3.c. Before transferring ownership or operation of a facility during its operating life, or of a disposal facility during the post-closure period, the owner or operator must notify the new owner or operator in writing of all applicable requirements.

8.2.3.d. An owner's or operator's failure to notify the new owner or operator of the requirements of ~~this-section~~ Section 8 of these regulations in no way relieves the new owner or operator of the obligation to comply with all applicable requirements.

8.2.4. General Waste Analysis.

8.2.4.a.1. Before an owner or operator treats, stores, or disposes of any hazardous waste, a detailed chemical and physical analysis of a representative sample of the waste must be obtained. At a minimum, this analysis must contain all the information which must be known to treat, store, or dispose of the waste in accordance with the requirements of ~~this-section~~ Section 8 of these regulations or with the conditions of a permit issued under Section 11 of these regulations.

Comment: Section 11.5 of these regulations requires that the waste analysis plan be submitted with Part B of the permit application.

8.2.4.a.2. The analysis may include data developed under Section 3 of these regulations, and existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes.

8.2.4.a.3. The facility's records of analysis 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 Section 8.2.4.a.1 of these regulations. The owner or operator of an off-site facility may arrange for the generator of the hazardous waste to supply part or all of the information required by Section 8.2.4.a.1 of these regulations. 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 section~~ Section 8.2.4 of these regulations.

8.2.4.a.4. 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:

~~8.2.4.a.4.i.~~ 8.2.4.a.4.A. When the owner or operator is notified, or has reason to believe, that the process or operation generating the hazardous waste has changed; and

~~8.2.4.a.4.ii.~~ 8.2.4.a.4.B. For off-site facilities, when the results of the inspection required in Section 8.2.4.a.5 of these regulations indicate that the hazardous waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper.

8.2.4.a.5. 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.

8.2.4.b. The owner or operator must develop and follow a written waste analysis plan which describes the procedures which will comply with Section 8.2.4.a of these regulations. This plan must be kept at the facility. At a minimum, the plan must specify:

8.2.4.b.1. The parameters for which each hazardous waste will be analyzed and the rationale for the selection of the parameters (i.e., how analysis for these parameters will provide sufficient information on the waste's properties to comply with Section 8.2.4.a of these regulations.

8.2.4.b.2. The test methods which will be used to test for these parameters.

8.2.4.b.3. 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:

~~8.2.4.b.3.i.~~ 8.2.4.b.3.A. One of the sampling methods described in Appendix I of these regulations.

~~8.2.4.b.3.ii.~~ 8.2.4.b.3.B. An equivalent sampling method.

8.2.4.b.4. The frequency which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up-to-date; and

8.2.4.b.5. For off-site facilities, the waste analyses that hazardous

waste generators have agreed to supply.

8.2.4.b.6. Where applicable, the methods which will be used to meet the additional waste analysis requirements for specific waste management methods as specified in Sections 8.2.8 of these regulations and the Air Pollution Control Commission's Regulation XXV in West Virginia Administrative Regulations, Air Pollution Control Commission, Series 25.

8.2.4.c. For off-site facilities, the waste analysis plan required in Section 8.2.4.b of these regulations 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:

8.2.4.c.1. The procedures which will be used to determine the identity of each movement of waste managed at the facility.

8.2.4.c.2. The sampling method which will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling.

8.2.5. Security.

8.2.5.a. 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 the facility unless it can be demonstrated to the chief that:

8.2.5.a.1. 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.

8.2.5.a.2. 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 section Section 8 of these regulations.

8.2.5.a.3. The owner or operator who wishes to make the demonstration referred to above must do so with Part B of the permit application.

8.2.5.b. Unless the owner or operator has made a successful demonstration under Sections 8.2.5.a.1 and 8.2.5.a.2 of these regulations, a facility must have:

8.2.5.b.1. A twenty-four 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;

~~8.2.5.b.2.i.~~ 8.2.5.b.2.A. An artificial or natural physical barrier (e.g., a fence in good repair or a fence combined with a cliff), which completely surrounds the active portions of the facility; and

~~8.2.5.b.2.ii.~~ 8.2.5.b.2.B. 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).

8.2.5.b.3. The requirements of Section 8.2.5.b of these regulations 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 Section 8.2.5.b.1 or 8.2.5.b.2 of these regulations.

8.2.5.c. Unless the owner or operator has made a successful demonstration under Sections 8.2.5.a.1 and 8.2.5.a.2 of these regulations, 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, and must be legible from a distance of at least twenty-five (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.

8.2.6. General Inspection Requirements.

8.2.6.a. The owner or operator must inspect the facility for malfunctions and deterioration, operator errors, and discharges which may be causing or may lead to:

8.2.6.a.1. Release of hazardous waste constituents to the environment;
or

8.2.6.a.2. 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.

8.2.6.b.1. 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.

8.2.6.b.2. This schedule must be kept at the facility.

8.2.6.b.3. 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.).

~~8.2.6.b.4. The frequency of inspection may vary for the items on the schedule. However, it should be based on the rate of possible deterioration of the equipment and the probability of an environmental or human health incident if the deterioration or malfunction of any operator error goes undetected between inspections. Areas subject to~~

spills,--such--as--loading-and-unloading-areas,-must-be-inspected-daily when-in-use.--At-a-minimum,-the-inspection-schedule--must--include--the terms--and--frequencies--called--for--in--Sections-8.7.6,-8.8.4,-8.9.5, 8.10.5,-and-8.11.3-of-these-regulations-where-applicable.

8.2.6.b.4. The frequency of inspection may vary for the items on the schedule. However, it should be based on the rate of possible deterioration of the equipment and the probability of an environmental or human health incident if the deterioration or malfunction of any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the terms and frequencies called for in 40 C.F.R. §§264.226 and 264.347 and Sections 8.7.6, 8.8.4, 8.8.6, 8.10.4, 8.10.5, and 8.11.3 of these regulations, where applicable.

8.2.6.b.5. A copy of the inspection schedule as required by Section 8.2.6.b of these regulations must be submitted to the chief with Part B of the permit application to ensure that it adequately protects human health and the environment. As part of this review, the chief may modify or amend the schedule as may be necessary.

8.2.6.c. The owner or operator must remedy any deterioration or malfunction of equipment or structures which the inspection reveals to ensure that the problem does not lead to an environmental or human health hazard. A schedule for remedial action may be allowed by the chief. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.

8.2.6.d. The owner or operator must record inspections in an inspection log or summary. These records must be kept for the life of the facility. 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.

8.2.7. Personnel Training.

8.2.7.a.1. 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 section Section 8 of these regulations. The owner or operator must ensure that this program includes all the elements described in the document required under Section 8.2.7.d.3 of these regulation.

8.2.7.a.2. 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.

8.2.7.a.3. At a minimum, the training program must be designed to ensure that the facility personnel are able to respond effectively to emergency by familiarizing them with emergency procedures, emergency equipment and emergency systems, including where applicable:

~~8.2.7.a.3.i~~ 8.2.7.a.3.A. Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;

~~8.2.7.a.3.ii~~ 8.2.7.a.3.B. Key parameters for automatic waste feed cut-off systems;

~~8.2.7.a.3.iii~~ 8.2.7.a.3.C. Communications or alarm systems;

~~8.2.7.a.3.iv~~ 8.2.7.a.3.D. Response to fires or explosions;

~~8.2.7.a.3.v~~ 8.2.7.a.3.E. Response to groundwater contamination incidents; and

~~8.2.7.a.3.vi~~ 8.2.7.a.3.F. Shutdown of operations.

8.2.7.a.4. An outline of the training program required by Section 8.2.7 of these regulations and a description of how the training program is designed to meet actual job tasks, must be submitted to the chief with Part B of the permit application.

8.2.7.b. Facility personnel must successfully complete the program required in Section 8.2.7.a of these regulations within six (6) 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 requirements of Section 8.2.7.a of these regulations.

8.2.7.c. Facility personnel must take part in an annual review of the initial training required in Section 8.2.7.a of these regulations.

8.2.7.d. The owner or operator must maintain the following documents and records at the facility:

8.2.7.d.1. The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job.

8.2.7.d.2. A written job description for each position listed under Section 8.2.7.d.1 of these regulations. 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.

8.2.7.d.3. 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 Section 8.2.7.d.1 of these regulations.

8.2.7.d.4. Records that document that the training or job experience required under Sections 8.2.7.a, 8.2.7.b, and 8.2.7.c of these regulations has been given to, and completed by, facility personnel.

8.2.7.e. Training records on current personnel must be kept until closure of the facility; training records on former employees must be kept for three (3) years from the date the employee last worked at the facility. Personnel training records may accompany personnel

transferred within the same company.

8.2.8. General Requirements for Ignitable, Reactive, or Incompatible Wastes.

8.2.8.a. 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.

8.2.8.b. Where specifically required by other sections of these regulations, the owner or operator of a facility that treats, stores or disposes ignitable or reactive waste, or mixes incompatible wastes or incompatible wastes and other materials, must take precautions to prevent reactions which:

8.2.8.b.1. Generate extreme heat or pressure, fire or explosions, or violent reactions.

8.2.8.b.2. Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment.

8.2.8.b.3. Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions.

8.2.8.b.4. Damage the structural integrity of the device or facility.

8.2.8.b.5. Through other like means threaten human health or the environment.

8.2.8.c. When required to comply with Sections 8.2.8.a and 8.2.8.b of these regulations, 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 Section 8.2.4 of these regulations) or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions.

8.3. Preparedness and Prevention.

8.3.1. Applicability.

The regulations in ~~this section~~ Section 8.3 of these regulations apply to owners and operators of all hazardous waste management facilities except as Section 8.1 of these regulations provides otherwise.

8.3.2. Design and Operation of Facility.

Facilities shall 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 State waters which could threaten human health or the environment.

8.3.3. Required Equipment.

All facilities shall be equipped with the following, unless it can be demonstrated to the chief in accordance with Section 11.5 of these regulations at the time of submission of Part B of the permit application, that none of the hazards posed by the waste handled at the facility could require a particular kind of equipment specified below:

8.3.3.a. An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel.

8.3.3.b. 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.

8.3.3.c. Portable fire extinguishers, fire control equipment, spill control equipment, and decontamination equipment.

8.3.3.d. Water at adequate volume and pressure to supply expected fire fighting demands, foam producing equipment, automatic sprinklers, or water spray systems.

8.3.4. Testing and Maintenance of Equipment.

All required facility communications or alarms systems, fire protection equipment, spill control equipment, and decontamination equipment, shall be tested and maintained as necessary to assure its proper operation in time of emergency. A record of tests or inspections will be maintained on a log at that facility or other reasonably accessible and convenient location.

8.3.5. Access to Communications or Alarm Systems.

8.3.5.a. Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation shall have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless such device is not required under Section 8.3.3 of these regulations.

8.3.5.b. If there is ever just one employee on the premises while the facility is operating, there must be 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 chief has ruled that such device is not required under Section 8.3.3 of these regulations.

8.3.6. Required Aisle Space.

The owner or operator shall maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill

control equipment, and decontamination equipment to any area of the facility operation in an emergency, unless it can be demonstrated to the chief in accordance with Section 11.5 of these regulations that aisle space is not needed for any of these purposes.

Comment: Any owner or operator who wishes to make the demonstration referred to above must do so with Part B of the permit application.

8.3.7. Arrangements With Local Authorities.

8.3.7.a. The owner or operator shall attempt to make the following arrangements, as appropriate, for the type of waste handled at the facility and the potential need for the services of these organizations.

8.3.7.a.1. 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.

8.3.7.a.2. 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.

8.3.7.a.3. Agreements with state emergency response teams, emergency response contractors, and equipment suppliers.

8.3.7.a.4. Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and types of injuries or illnesses which could result from fire, explosions, or releases at the facility.

8.3.7.b. Where state or local authorities decline to enter into such arrangements, the owner or operator shall document the refusal in the operating record.

8.4. Contingency Plan and Emergency Procedures.

8.4.1. Applicability.

The regulations of Section 8.4 of these regulations apply to owners and operators of all hazardous waste facilities except as Section 8.1 of these regulations provides otherwise.

8.4.2. Purpose and Implementation of Contingency Plan.

8.4.2.a. Each owner or operator shall have a contingency plan for the facility. The contingency plan shall 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 State waters.

8.4.2.b. The provisions of the plan shall 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.

8.4.3. Content of Contingency Plan.

8.4.3.a. The contingency plan shall describe the actions that facility personnel shall take to comply with Sections 8.4.2 and 8.4.7 of these regulations in response to fires, explosions or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or State waters.

8.4.3.b. The owner or operator has already prepared a Spill Prevention, Control and Countermeasures (SPCC) Plan in accordance with 40 C.F.R. Part 112 or 1510, or some other emergency or contingency plan, amendments to the plan need only to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of Section 8.4 of these regulations.

8.4.3.c. The plan shall describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and State and local emergency response teams to coordinate emergency services, as required.

8.4.3.d. The plan shall list names, addresses, and office and home phone numbers of all persons qualified to act as emergency coordinators and this list shall be kept up-to-date. Where more than one person is listed, one shall be named a primary emergency coordinator and others shall be listed in the order in which they will assume responsibilities as alternates. For new facilities, the list is to be supplied at the time of certification.

8.4.3.e. The plan shall include a list of all required emergency equipment at the facility. This list shall be kept up-to-date. In addition, the plan shall include the location and a physical description of each item on the list and a brief outline of its capabilities.

8.4.3.f. The plan shall include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan shall 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, hazardous waste constituents, or fires.

8.4.4. Copies of Contingency Plan.

A copy of the contingency plan and all revisions to the plan shall be:

8.4.4.a. Maintained at the facility.

8.4.4.b. 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 chief with Part B of the permit application under Section 11 of these regulations and, after modification or approval, will become a condition of the permit.

8.4.5. Amendment of Contingency Plan.

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

8.4.5.a. The facility permit is revised.

8.4.5.b. The plan fails in an emergency.

8.4.5.c. 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.

8.4.5.d. The list of emergency coordinators changes.

8.4.5.e. The list of emergency equipment changes.

Comment: A change in the lists of facility emergency coordinators or equipment in the contingency plan constitutes a minor modification to the facility permit to which the plan is a condition.

8.4.6. Emergency Coordinator.

At all times, there shall 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) and able to reach the area in a short time, with the responsibility for coordinating all emergency response measures. This emergency coordinator shall be thoroughly familiar with all aspects of the facility 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, the person shall have the authority to commit the resources needed to carry out the contingency plan.

8.4.7. Emergency Procedures.

8.4.7.a. Whenever there is an imminent or actual emergency situation, the emergency coordinator, or the designee when the emergency coordinator is on call, shall immediately:

8.4.7.a.1. Activate internal facility alarms or communication systems, where applicable, to notify all affected facility personnel; and

8.4.7.a.2. Notify appropriate state or local agencies with designated response roles if their help is needed.

8.4.7.b. If there is a release, fire, or explosion, the emergency coordinator shall immediately identify the character, exact sources, amount, and areal extent of any released materials. This may be done by observation or review of facility records or manifests and, if necessary, by chemical analysis.

8.4.7.c. Concurrently, the emergency coordinator shall assess possible hazards to human health or the environment that may result from the

release, fire, or explosion. This assessment shall consider both direct and indirect effects of the release, fire, or explosion (e.g., the effect of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water runoff from water or chemical agents used to control fire and heat-induced explosions).

8.4.7.d. If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, to the environment outside the facility the finding shall be reported as follows:

8.4.7.d.1. If the assessment indicates that evacuation of local areas may be advisable, immediate notification shall be given to appropriate local authorities. The emergency coordinator shall be available to help appropriate officials decide whether local areas should be evacuated.

8.4.7.d.2. The emergency coordinator shall immediately notify the County director for the office of emergency services designated as the on-scene coordinator for that area and the Division of Water Resources' Emergency Notification Number 1-800-642-3074. The notification shall include:

~~8.4.7.d.2.i.~~ 8.4.7.d.2.A. Name and telephone number of notifier;

~~8.4.7.d.2.ii.~~ 8.4.7.d.2.B. Name and address of facility;

~~8.4.7.d.2.iii.~~ 8.4.7.d.2.C. Time and type of incident;

~~8.4.7.d.2.iv.~~ 8.4.7.d.2.D. Name and quantity of material(s) involved to the extent known;

~~8.4.7.d.2.v.~~ 8.4.7.d.2.E. The extent of injuries, if any; and

~~8.4.7.d.2.vi.~~ 8.4.7.d.2.F. The possible hazards to human health or the environment outside the facility.

8.4.7.e. During an emergency, the emergency coordinator shall 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 shall include, where applicable, stopping processes and operations, collecting and containing released wastes, and removing or isolating containers.

8.4.7.f. If the facility stops operations in response to a fire, explosion, or release, the emergency coordinator shall monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

8.4.7.g. Immediately after an emergency, the emergency coordinator shall provide for treating, storing, or disposing of recovered waste, contaminated soil or waters, or any other material that results from a release, fire, or explosion at the facility.

8.4.7.h. The emergency coordinator shall ensure that in the affected area(s) of the facility:

8.4.7.h.1. No waste that may be incompatible with the released material is treated, stored, or disposed of until clean-up procedures are completed.

8.4.7.h.2. All emergency equipment listed in the contingency plan is clean and fit for its intended use before operations are resumed.

8.4.7.i. The owner or operator shall notify the chief that the facility is in compliance with Sections 8.4.7.f through 8.4.7.j of these regulations before operations are resumed in the affected area(s) of the facility.

8.4.7.j. The owner or operator shall note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within fifteen (15) days after the incident, a written report shall be submitted to the chief. The report shall include:

8.4.7.j.1. Name, address, and telephone number of the owner or operator.

8.4.7.j.2. Name, address, and telephone number of the facility.

8.4.7.j.3. Date, time, and type of incident.

8.4.7.j.4. Name and quantity of material(s) involved.

8.4.7.j.5. The extent of injuries, if any.

8.4.7.j.6. An assessment of actual or potential hazards to human health or the environment, where this is applicable.

8.4.7.j.7. Estimated quantity and disposition of recovered material that resulted from the incident.

8.4.7.j.8. Measures taken to prevent recurrence of the emergency.

8.4.7.j.9. Such other information specifically requested by the chief which is reasonably necessary and relevant to the purpose of an operating record.

8.5. Manifest System, Record Keeping, and Reporting.

8.5.1. Applicability.

The regulations in ~~this section~~ Section 8.5 of these regulations apply to owners and operators of both on-site and off-site facilities, except as Section 8.1 of these regulations provides otherwise. Sections 8.5.2, 8.5.3, and 8.5.7 of these regulations do not apply to owners and operators of on-site facilities that do not receive a hazardous waste from off-site sources.

8.5.2. Use of the Manifest System.

8.5.2.a. If a facility receives hazardous waste accompanied by a manifest, the owner or operator, or his agent, must:

8.5.2.a.1. Sign and date each copy of the manifest to certify that the hazardous waste covered by the manifest was received;

8.5.2.a.2. Note any significant discrepancies in the manifest as defined in Section 8.5.3.a of these regulations on each copy of the manifest;

8.5.2.a.3. Immediately give the transporter at least one copy of the signed manifest;

8.5.2.a.4. Within thirty (30) days after the delivery, send a copy of the manifest to the generator; and

8.5.2.a.5. Retain at the facility a copy of each manifest for at least three (3) years from the date of delivery.

8.5.2.b. 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 EPA identification numbers, generator's certification, and signatures), the owner or operator, or his agent, must:

8.5.2.b.1. 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;

8.5.2.b.2. Note any significant discrepancies (as defined in Section 8.5.3.a of these regulations) in the manifest or shipping paper (if the manifest has not been received) on each copy of the manifest or shipping paper;

8.5.2.b.3. 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);

8.5.2.b.4. Within thirty (30) days after the delivery, send a copy of the signed and dated manifest to the generator; however, if the manifest has not been received within thirty (30) days after delivery, the owner or operator, or his agent, must send a copy of the shipping paper signed and dated to the generator; and

8.5.2.b.5. 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 (3) years from the date of delivery.

8.5.2.c. Whenever a shipment of hazardous waste is initiated from a facility, the owner or operator of that facility must comply with the requirements of Section 6 of these regulations.

8.5.3. Manifest Discrepancies.

8.5.3.a. Manifest discrepancies are differences between the quantity or type of hazardous waste designated on the manifest or shipping paper and the quantity or type of hazardous waste a facility actually receives. Significant discrepancies in quantity are:

8.5.3.a.1. For bulk waste, variations greater than 10 percent (10%) in

weight, and

8.5.3.a.2. For batch waste, any variation in piece count, such as a discrepancy of one drum in a truckload.

Significant discrepancies 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.

8.5.3.b. Upon discovery of a significant discrepancy, 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 fifteen (15) days after receiving the waste, the owner or operator must immediately submit to the chief a letter describing the discrepancy and attempts to reconcile it and a copy of the manifest or shipping paper at issue.

8.5.4. Operating Record.

8.5.4.a. The owner or operator shall keep a written operating record at the facility.

8.5.4.b. The following information shall be recorded, as it becomes available, and maintained in the operating record until closure of the facility:

8.5.4.b.1. 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 X of these regulations.

8.5.4.b.2. The location of each hazardous waste within the facility and the quantity of 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 specific manifest document numbers, if the waste was accompanied by manifest.

8.5.4.b.3. Records and results of waste analyses performed as specified in Sections 8.2.4 and 8.2.8 of these regulations.

8.5.4.b.4. Summary reports and details of all incidents that require implementing the contingency plan, as required by Section 8.4.7.j of these regulations.

8.5.4.b.5. Records and results of inspections as required by Section 8.2.6 of these regulations.

~~8.5.4.b.6. For off-site facilities, notices to generators as specified in Section 8.2.3.b of these regulations.~~

8.5.4.b.6. Monitoring, testing, or analytical data where required by Sections 8.8.2, 8.8.4, 8.8.6, 8.9.5, 8.10.4, 8.10.5, 8.11.3, 8.11.10, 8.12.7, 8.12.9, 8.12.11, and 8.13 of these regulations and West Virginia Administrative Regulations, Air Pollution Control Commission, Series 25, Section 9.

8.5.4.b.7. All closure cost estimates and, for disposal facilities, all post-closure cost estimates.

8.5.4.b.8. Monitoring, testing, or analytical data where required by Sections 8.9.5, 8.10.4, 8.10.5, 8.11.3.a, 8.11.3.b, 8.11.10.a, 8.11.10.b, 8.12.7, 8.12.9, 8.12.11, and 8.13 of these regulations.

8.5.4.b.9. 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 that 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.

8.5.5. Availability, Retention, and Disposition of Records.

8.5.5.a. All records, including plans required under Section 8 of these regulations, shall be furnished upon request and made available at reasonable times for inspection by the chief or any authorized representative, employee, or agent of the Division.

8.5.5.b. The retention period for all records required under this Section is extended automatically during the course of any unresolved enforcement action regarding the facility or as requested by the chief.

8.5.5.c. A copy of records of waste disposal locations and quantities under Section 8.5.4.b.2 of these regulations shall be submitted to the chief and to the appropriate land authority upon closure of the facility.

8.5.6. Annual Report.

The owner or operator shall prepare and submit a single copy of an annual report for the preceding year (January 1 - December 31) to the chief by March of each year. A form prescribed by the chief shall be used for this report. The annual report shall cover facility activities during the previous calendar year and shall include the following information:

8.5.6.a. The EPA identification number, name, and address of the facility.

8.5.6.b. The calendar year covered by the report.

8.5.6.c. For off-site facilities, the EPA identification number of each hazardous waste generator from which the facility received hazardous waste during the year; for imported shipments, the report shall give the name and address of the foreign generator.

8.5.6.d. A description and the quantity of each hazardous waste the facility received during the year. For off-site facilities, this information shall be listed by the EPA identification number of each generator.

8.5.6.e. The method of treatment, storage, or disposal for each hazardous waste.

8.5.6.f. Groundwater monitoring data on a form prescribed by the chief.

8.5.6.g. The most recent closure cost estimate and, for disposal facilities, the most recent post-closure cost estimate.

8.5.6.h. The certification signed by the owner or operator of the facility or an authorized representative.

8.5.7. Unmanifested Waste Report.

If a facility accepts for treatment, storage, or disposal any hazardous waste from an off-site source without an accompanying manifest or shipping paper and if the waste is not excluded from the manifest requirement by Section 10 of these regulations, then the owner or operator shall prepare and submit a single copy of a report to the chief within fifteen (15) days after receiving the waste, on a form prescribed by the chief. The report must be designated "Unmanifested Waste Report" and shall include the following information:

8.5.7.a. The EPA identification number, name, and address of the facility.

8.5.7.b. The date the facility received the waste.

8.5.7.c. The EPA identification number, name, and address of the generator and the transporter, if available.

8.5.7.d. A description and the quantity of each unmanifested hazardous waste the facility received.

8.5.7.e. The method of treatment, storage, or disposal for each hazardous waste.

8.5.7.f. The certification signed by the owner or operator of the facility or an authorized representative.

8.5.7.g. A brief explanation of why the waste was unmanifested, if known.

Comment: Small quantities of hazardous waste are excluded from regulation under ~~this section~~ Section 8.5.7 of these regulations and do not require a manifest. Where a facility receives unmanifested hazardous wastes, the owner or operator must obtain from each generator a certification that the waste qualifies for exclusion. Otherwise, the owner or operator is required to file an unmanifested waste report for the hazardous waste movement.

8.5.8. Additional Reports.

In addition to submitting the annual report and unmanifested waste reports, the owner or operator shall also report to the chief:

8.5.8.a. Releases, fires, and explosions as specified in Section 8.4.7 of these regulations.

8.5.8.b. Facility closure as specified in Section 8.6 of these regulations.

8.5.8.c. As otherwise required by Sections 8.9, 8.10, 8.11, 8.12, and 8.13 of these regulations.

8.6. Closure and Post-Closure.

8.6.1. Applicability.

Except as Section 8.1 of these regulations provides otherwise:

8.6.1.a. Sections 8.6.2 through 8.6.6, 15.3, and 15.4 of these regulations (which concern closure) apply to the owners and operators of all hazardous waste management facilities; and

8.6.1.b. Sections 8.6.7 through 8.6.9, 15.3, and 15.4 of these regulations (which concern post-closure care) apply to the owners and operators of:

~~8.6.1.b.i.~~ 8.6.1.b.1. All hazardous waste disposal facilities; and

~~8.6.1.b.ii.~~ 8.6.1.b.2. Waste piles and surface impoundments from which the owner or operator intends to remove that wastes at closure to the extent that these sections are made applicable to such facilities in Sections 8.9.7 and 8.10.9 of these regulations; and

8.6.1.b.3. Tank systems that are required under Section 8.8.5 of these regulations to meet the requirements for landfills.

8.6.2. Closure Performance Standard.

The owner or operator must close the facility in a manner that:

8.6.2.a. Minimizes the need for further maintenance.

8.6.2.b. Controls, minimizes, or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous waste constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the State waters or to the atmosphere; and

8.6.2.c. Complies with the closure requirements of this Section 8.6.2 of these regulations including, but not limited to, the requirements of Sections 8.7.10, ~~8.8.5~~ 8.8.8, 8.9.7, 8.10.9, 8.11.11, and 8.12.11 of these regulations and West Virginia Administrative Regulations, Air Pollution Control Commission, Series 25, Section 24.01.

8.6.3. Closure Plan; Amendment of Plan.

8.6.3.a. Written Plan.

8.6.3.a.1. The owner or operator of a hazardous waste management facility must have a written closure plan. In addition, certain surface impoundments from which the owner or operator intends to remove or decontaminate the hazardous waste at partial or final closure are required by Section 8.9.7.c of these regulations to have a contingent closure plan. The plan must be submitted with Part B of the permit application in accordance with Section 11.5.1 of these regulations and approved by the chief as part of the permit issuance procedures under

Section 11 of these regulations and will become a condition of the permit.

8.6.3.a.2. The chief's approval of the plan must ensure that the approved closure plan is consistent with Sections 8.6.2 through 8.6.6 of these regulations, the applicable requirements of Sections 8.7.10, ~~8.8.5~~ 8.8.8, 8.9.7, 8.9.10, 8.10.9, 8.11.11, 8.12.11, 8.13, and 13 of these regulations, and the requirements of West Virginia Administrative Regulations, Air Pollution Control Commission, Series 25, Section 24.01. Until final closure is completed and certified, a copy of the approved plan and all revisions of the plan must be furnished to the chief upon request (including request by mail).

8.6.3.b. Content of Plan. The plan must identify steps necessary to perform partial or final closure, or both, of the facility at any point during its active life. The closure plan must include at least:

8.6.3.b.1. A description of how each hazardous waste management unit at the facility will be closed in accordance with Section 8.6.2 of these regulations; and

8.6.3.b.2. A description of how final closure of the facility will be conducted in accordance with Section 8.6.2 of these regulations. The description must identify the maximum extent of the operations which will be unclosed during the active life of the facility; and

8.6.3.b.3. 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

8.6.3.b.4. 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 standards; and

8.6.3.b.5. 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, groundwater monitoring, leachate collection, and run-on and runoff control; and

8.6.3.b.6. 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 the time required to place a final cover must be

included.

8.6.3.b.7. For facilities that use trust funds to establish financial assurance under Section 13 of these regulations, and that are expected to close prior to the expiration of the permit, an estimate of the expected year of final closure.

8.6.3.c. Amendment of Plan. The owner or operator must submit a written request for a permit modification to authorize a change in operating plans, facility design, or the approved closure plan in accordance with the procedures in Section 11 of these regulations. The written request must include a copy of the amended closure plan for approval by the chief.

8.6.3.c.1. The owner or operator may submit a written request to the chief for a permit modification to amend the closure plan at any time prior to the notification of partial or final closure of the facility.

8.6.3.c.2. The owner or operator must submit a written request for a permit modification to authorize a change in the approved closure plan whenever:

8.6.3.c.2.A. Changes in operating plans or facility design affect the closure plan; or

8.6.3.c.2.B. There is a change in the expected year of closure, if applicable; or

8.6.3.c.2.C. In conducting partial or final closure activities, unexpected events require a modification of the approved closure plan.

~~8.6.3.e.3.A.~~ 8.6.3.c.3. The owner or operator must submit a written request for a permit modification including a copy of the amended closure plan for approval at least sixty (60) days prior to the proposed change in facility design or operation, or no later than sixty (60) days after an unexpected event has occurred which has affected the closure plan.

~~8.6.3.e.3.B.~~ 8.6.3.c.4. If an unexpected event occurs during the partial or final closure period, the owner or operator must request a permit modification no later than thirty (30) days after the unexpected event.

~~8.6.3.e.3.C.~~ 8.6.3.c.5. An owner or operator of a surface impoundment who intends to remove all hazardous waste at closure and who is not otherwise required to prepare a contingent closure plan under Section 8.9.7.c of these regulations must submit an amended closure plan to the chief no later than sixty (60) days from the date that the owner or operator or the chief determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of Section 8.11.11 of these regulations, or no later than thirty (30) days from that date if the determination is made during partial or final closure.

~~8.6.3.e.3.D.~~ 8.6.3.c.6. The owner or operator of a waste pile who intends to remove all hazardous waste at closure must submit an amended closure plan to the chief no later than sixty (60) days from the date

that the owner or operator or the chief determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of Section 8.11.11 of these regulations, or no later than thirty (30) days from that date if the determination is made during partial or final closure.

~~8.6.3.e.3.E~~ 8.6.3.c.7. The chief will approve, disapprove, or modify the amended plan in accordance with the procedures in Section 11 of these regulations. In accordance with Section 11.5.1 of these regulations, the approved closure plan will become a condition of any permit issued.

~~8.6.3.e.4~~ 8.6.3.c.8. The chief may request modifications to the plan under the conditions described in Section 8.6.3.c.2 of these regulations. The owner or operator must submit the modified plan within sixty (60) days of the chief's request, or within thirty (30) days if the change in facility conditions occurs during partial or final closure. Any modifications requested by the chief will be approved in accordance with the procedures in Section 11 of these regulations.

8.6.3.d. Notification of Partial Closure and Final Closure.

8.6.3.d.1. The owner or operator must notify the chief in writing at least sixty (60) days prior to the date on which he expects to begin closure of a surface impoundment, a waste pile, or a land treatment or landfill unit or the final closure of a facility with such a unit. The owner or operator must notify the chief in writing at least forty-five (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.

8.6.3.d.2. The date when he "expects to begin closure" must be either no later than thirty (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 (1) 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 chief that the hazardous waste management unit or facility has the capacity to receive additional hazardous wastes and that 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 chief may approve an extension to this one-year limit.

8.6.3.d.3. If the facility's permit is terminated, or if the facility is otherwise ordered by judicial decree or final order under Section 3008 of RCRA, to cease receiving hazardous wastes or to close, then the requirements of Section 8.6.3.d of these regulations do not apply. However, the owner or operator must close the facility in accordance with the deadlines established in Section 8.6.4 of these regulations.

8.6.3.e. Removal of Wastes and Decontamination or Dismantling of Equipment. Nothing in Section 8.6.3 of these regulations 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.

8.6.4. Closure; Time Allowed for Closure.

8.6.4.a. Within ninety (90) days after receiving the final volume of hazardous wastes 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 chief may approve a longer period if the owner or operator complies with all applicable requirements for requesting a modification of the permit and demonstrates that:

8.6.4.a.1. The activities required to comply with this subsection will, of necessity, take longer than ninety (90) days to complete; or

8.6.4.a.2.A. The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes;

8.6.4.a.2.B. There is a reasonable likelihood that he or another person will recommence operation of the hazardous waste management unit or the facility within one (1) year; and

8.6.4.a.2.C. Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and

8.6.4.a.3. 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.

8.6.4.b. The owner or operator must complete partial and final closure activities in accordance with the approved closure plan and within one hundred and eighty (180) days after receiving the final volume of hazardous wastes at the hazardous waste management unit or facility. The chief 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:

8.6.4.b.1. The partial or final closure activities will, of necessity, take longer than one hundred and eighty (180) days to complete; or

8.6.4.b.2.A. The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes;

8.6.4.b.2.B. There is reasonable likelihood that he or another person will recommence operation of the hazardous waste management unit or facility within one year; and

8.6.4.b.2.C. Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and

8.6.4.b.3. 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.

8.6.4.c. Notwithstanding the provisions of Section 8.6.4.b of these

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.

8.7.4. Management of Containers.

8.7.4.a. A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste.

8.7.4.b. 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.

8.7.5. (Reserved).

8.7.6. Inspections.

At least weekly, the owner or operator must inspect areas where containers are stored, looking for leaking containers and for deterioration of containers and the containment system caused by corrosion or other factors.

Comment: See Section 8.2.6.c and Section 8.7.2 of these regulations for remedial action required if deterioration or leaks are detected.

8.7.7. Containment.

8.7.7.a. Container storage areas must have a containment system that is designed and operated in accordance with Section 8.7.7.b of these regulations, except as otherwise provided by Section 8.7.7.c of these regulations.

8.7.7.b. A containment system must be designed and operated as follows:

8.7.7.b.1. 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;

8.7.7.b.2. 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;

8.7.7.b.3. The containment system must have sufficient capacity to contain ten percent (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;

8.7.7.b.4. Run on into the containment system must be prevented unless the chief waives this requirement in the permit after determining that the collection system has sufficient excess capacity in addition to that required in Section 8.7.7.b.3 of these regulations to contain any run-on which might enter the system; and

8.7.7.b.5. 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.

8.7.7.b.6. If the collected material is a hazardous waste under Section 3 of these regulations, it must be managed as a hazardous waste in accordance with all applicable requirements. If the collected material is discharged through a point source to waters of the State, it is subject to the State Water Pollution Control Act and regulations promulgated thereunder.

8.7.7.c. Storage areas that store containers holding only wastes that do not contain free liquids need not have a containment system defined by Section 8.7.7.b of these regulations, provided that:

8.7.7.c.1. The storage area is sloped or otherwise designed and operated to drain and remove liquid resulting from precipitation; and

8.7.7.c.2. The containers are elevated or are otherwise protected from contact with accumulated liquid.

8.7.8. Special Requirements for Ignitable or Reactive Wastes.

Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line.

8.7.9. Special Requirements for Incompatible Wastes.

8.7.9.a. Incompatible wastes, or incompatible wastes and other materials, must not be placed in the same container, unless Section 8.2.8 of these regulations is complied with.

8.7.9.b. Hazardous waste must not be placed in an unwashed container that previously held an incompatible waste or material.

8.7.9.c. A storage container holding a 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.

8.7.10. Closure.

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.

Comment: At closure, as throughout the operating period, unless the owner or operator can demonstrate in accordance with Section 3.1.2.d of these regulations that the 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.

~~8.8--Tanks--~~

8.8.1.-Applicability.

8.8.1.a.-The regulations in this section apply to owners and operators of facilities that use tanks to treat or store hazardous waste except as Sections 8.1 and 8.8.1.b of these regulations provide otherwise.

8.8.1.b.-The regulations in this section do not apply to facilities that treat or store hazardous waste in covered underground tanks that cannot be entered for inspection. Existing covered underground tanks may continue to operate under interim status but existing and new covered underground tanks will not be able to receive a finally effective hazardous waste management permit.

8.8.2.-Design of Tanks.

Tanks must have sufficient shell strength and, for closed tanks, pressure controls (e.g., vents) to assure that they do not collapse or rupture. The chief will review the design of the tanks, including the foundation, structural supports, seams, and pressure controls. The chief shall require that a minimum shell thickness be maintained at all times to ensure sufficient shell strength. Factors to be considered in establishing minimum thickness include the width, height, and materials of construction of the tank and the specific gravity of the waste which will be placed in the tank. In reviewing the design of the tank and establishing a minimum thickness, the chief shall rely upon appropriate industrial design standards and other available information.

8.8.3.-General Operating Requirements.

8.8.3.a.-Wastes and other materials (e.g., treatment reagents) which are incompatible with the material of construction of the tank must not be placed in the tank unless the tank is protected from accelerated corrosion, erosion, or abrasion through the use of:

8.8.3.a.1.-An inner liner or coating which is compatible with the waste or material and which is free of leaks, cracks, holes, or other deterioration; or

8.8.3.a.2.-Alternative means of protection (e.g., cathodic protection or corrosion inhibitors).

8.8.3.b.-The owner or operator must use appropriate controls and practices to prevent overfilling. These must include:

8.8.3.b.1.-Controls to prevent overfilling (e.g., waste feed cutoff system or by-pass system to a standby tank); and

8.8.3.b.2.-For uncovered tanks, maintenance or sufficient freeboard to prevent overtopping by wave or wind action or by precipitation. The freeboard shall not be less than 60 centimeters (2 feet) unless the permittee can demonstrate to the chief that an alternate freeboard level will be sufficient to prevent overtopping.

8.8.4.-Inspections.

8.8.4.a.-The owner or operator must inspect:

8.8.4.a.1. - Overfilling control equipment (e.g., waste feed cut-off systems and by-pass systems) at least once each operating day to ensure that it is in good working order.

8.8.4.a.2. - Data gathered from monitoring equipment (e.g., pressure and temperature gauges), where present, at least once each operating day to ensure that the tank is being operated according to design.

8.8.4.a.3. - For unsewered tanks, the level of waste in the tank, at least once each operating day to ensure compliance with Section 8.8.3.b of these regulations.

8.8.4.a.4. - The construction materials of above-ground portions of the tank, at least weekly, to detect corrosion or erosion and leaking of fixtures and seams.

8.8.4.a.5. - The area immediately surrounding the tank, at least weekly, to detect obvious signs of leakage (e.g., wet spots or dead vegetation).

8.8.4.b. - As part of the inspection schedule required in Section 8.2.6.b of these regulations and in addition to the specific requirements of Section 8.8.4.a of these regulations, the owner or operator must develop a schedule and procedure for assessing the condition of the tank. The schedule and procedure must be adequate to detect cracks, leaks, corrosion, and erosion which may lead to cracks or leaks, or wall thinning to less than the thickness required under Section 8.8.2 of these regulations. Procedures for emptying a tank to allow entry and inspection of the interior must be established when necessary to detect corrosion or erosion of the tank sides and bottom. The frequency of these assessments must be based on the material of construction of the tank, type of corrosion or erosion protection used, rate of corrosion or erosion observed during previous inspections, and the characteristics of the waste being treated or stored.

8.8.4.c. - As part of the contingency plan required under Section 8.4 of these regulations, the owner or operator must specify the procedures to be used to respond to tank spills or leakage, including procedures and timing for expeditious removal of leaked or spilled waste and repair of the tank.

8.8.5. - Closure.

8.8.5.a. - At closure, all hazardous waste and hazardous waste residues must be removed from tanks, discharge control equipment, and discharge confinement structures.

8.8.5.b. - At closure, as throughout the operating period, unless the owner or operator can demonstrate in accordance with Section 3.4.2.d of these regulations that the waste removed from the 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 State laws and regulations promulgated thereunder.

8.8.6. - Special Requirements for Ignitable or Reactive Wastes.

8.8.6.a. - Ignitable or reactive waste must not be placed in a tank

unless:

8.8.6.a.1. The waste is treated, rendered, or mixed before or immediately after placement in the tank so that the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste and Section 8.2.8 of these regulations is complied with; or

8.8.6.a.2. The waste is stored or treated in such a way that it is protected from any material or conditions which may cause the waste to ignite or react; or

8.8.6.a.3. The tank is used solely for emergencies.

8.8.6.b. The owner or operator of a facility which treats or stores ignitable or reactive waste in covered tanks must comply with the National Fire Protection Association's (NFPA's) buffer zone requirements for tanks, contained in Tables 2-4 through 2-6 of the "Flammable and Combustible Liquids Code" 1984.

8.8.7. Special Requirements for Incompatible Wastes.

8.8.7.a. Incompatible wastes, or incompatible wastes and other materials, must not be placed in the same tank, unless Section 8.2.8.b of these regulations is complied with.

8.8.7.b. Hazardous waste must not be placed in an unwashed tank which previously held an incompatible waste or material unless Section 8.2.8.b of these regulations is complied with.

8.8. Tanks.

8.8.1. Applicability.

The requirements of Section 8.8 of these regulations apply to owners and operators of facilities that use tank systems for storing or treating hazardous waste, except as otherwise provided in Section 8.8.1.a, 8.8.1.b, or 8.1.2 of these regulations.

8.8.1.a. Tanks 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 Section 8.8.4 of these regulations. To demonstrate the absence or presence of free liquids in the stored or treated waste, EPA Method 9095 (Paint Filter Liquids Test) as described in SW-846 must be used.

8.8.1.b. Tanks, including sumps, as defined in Section 2 of these regulations, that serve as part of a secondary containment system to collect or contain releases of hazardous wastes are exempted from the requirements in Section 8.8.4 of these regulations.

8.8.2. Assessment Of Existing Tank System's Integrity.

8.8.2.a. For each existing tank system that does not have secondary containment meeting the requirements of Section 8.8.4 of these regulations, the owner or operator must determine that the tank system is not leaking or is unfit for use. Except as provided in Section

8.8.2.c of these regulations, the owner or operator must obtain and keep on file at the facility a written assessment reviewed and certified by an independent, qualified registered professional engineer, in accordance with Section 11.7.4 of these regulations, that attests to the tank system's integrity by January 12, 1988.

8.8.2.b. 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:

8.8.2.b.1. Design standard(s), if available, according to which the tank and ancillary equipment were constructed;

8.8.2.b.2. Hazardous characteristics of the waste(s) that have been and will be handled;

8.8.2.b.3. Existing corrosion protection measures;

8.8.2.b.4. Documented age of the tank system, if available (otherwise, an estimate of the age); and

8.8.2.b.5. Results of a leak test, internal inspection, or other tank integrity examination such that:

8.8.2.b.5.A. 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 defections, vapor pockets, and high water table effects; and

8.8.2.b.5.B. For other than non-enterable underground tanks and for ancillary equipment, this assessment must include either a leak test or other integrity examination, that is certified by an independent, qualified registered professional engineer, in accordance with Section 11.7.4 of these regulations, 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 XVIII, "Atmospheric and Low-Pressure Storage Tanks," 4th Edition, 1981, may be used where applicable as guidelines in conducting other than a leak test.

8.8.2.c. Tank systems that store or treat materials that become hazardous wastes subsequent to July 14, 1986 must conduct this assessment within twelve (12) months after the date that the waste becomes a hazardous waste.

8.8.2.d. If as a result of the assessment conducted in accordance with Section 8.8.2.a of these regulations a tank system is found to be leaking or unfit for use, the owner or operator must comply with the requirements of Section 8.8.7 of these regulations.

8.8.3. Design Of Tanks.

8.8.3.a. Owners or operators of new tank systems or components must

obtain and submit to the chief, at time of submittal of Part B information, a written assessment, reviewed and certified by an independent, qualified registered professional engineer, in accordance with Section 11.7.4 of these regulations, 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 chief to review and approve or disapprove the acceptability of the tank system design, must include, at a minimum, the following information:

8.8.3.a.1. Design standard(s) according to which tank(s) or the ancillary equipment are constructed;

8.8.3.a.2. Hazardous characteristics of the waste(s) to be handled;

8.8.3.a.3. 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:

8.8.3.a.3.A. Factors affecting the potential for corrosion, including but not limited to:

8.8.3.a.3.A.i. Soil moisture content;

8.8.3.a.3.A.ii. Soil pH;

8.8.3.a.3.A.iii. Soil sulfides level;

8.8.3.a.3.A.iv. Soil resistivity;

8.8.3.a.3.A.v. Structure to soil potential;

8.8.3.a.3.A.vi. Influence of nearby underground metal structures (e.g., piping);

8.8.3.a.3.A.vii. Existence of stray electric current; and

8.8.3.a.3.A.viii. Existing corrosion protection measures (e.g., coating, cathodic protection); and

8.8.3.a.3.B. 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:

8.8.3.a.3.B.i. Corrosion-resistant materials of construction such as special alloys or fiberglass reinforced plastic;

8.8.3.a.3.B.ii. Corrosion-resistant coating (such as epoxy or fiberglass) with cathodic protection (e.g., impressed current or sacrificial anodes); and

8.8.3.a.3.B.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.

8.8.3.a.4. 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

8.8.3.a.5. Design considerations to ensure that:

8.8.3.a.5.A. Tank foundations will maintain the load of a full tank;

8.8.3.a.5.B. 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 subject to the standards of Section 12.1.1 of these regulations; and

8.8.3.a.5.C. Tank systems will withstand the effects of frost heave.

8.8.3.b. 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 an independent, qualified registered 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:

8.8.3.b.1. Weld breaks;

8.8.3.b.2. Punctures;

8.8.3.b.3. Scrapes of protective coatings;

8.8.3.b.4. Cracks;

8.8.3.b.5. Corrosion; or

8.8.3.b.6. Other structural damage, inadequate construction, or inadequate installation.

8.8.3.c. All discrepancies discovered during the inspection under Section 8.8.3.b of these regulations must be remedied before the tank system is covered, enclosed, or placed in use.

8.8.3.d. 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.

8.8.3.e. 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.

8.8.3.f. 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, "Installation of Underground Petroleum Storage Systems," November 1979, 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.

8.8.3.g. 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 Section 8.8.3.a.3 of these regulations, or other corrosion protection if the chief 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.

8.8.3.h. 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 Sections 8.8.3.a through 8.8.3.f of these regulations that attest that the tank system was properly designed and installed and that repairs pursuant to Sections 8.8.3.a and 8.8.3.d of these regulations were performed. These written statements must also include the certification statement as required in Section 11.7.4 of these regulations.

8.8.4. Containment And Detection Of Releases.

8.8.4.a. In order to prevent the release of hazardous waste or hazardous constituents to the environment, secondary containment that meets the requirements of Section 8.8.4 of these regulations must be provided (except as provided in Sections 8.8.4.f and 8.8.4.g of these regulations):

8.8.4.a.1. For all new tank systems or components, prior to their being put into service.

8.8.4.a.2. For all existing tank systems used to store or treat EPA Hazardous Waste Numbers F020, F021, F022, F023, F026, and F027, within two (2) years after January 12, 1987.

8.8.4.a.3. For those existing tank systems of known and documented age, within two (2) years after January 12, 1987, or when the tank system has reached fifteen (15) years of age, whichever comes later.

8.8.4.a.4. For those existing tank systems for which the age cannot be documented, within eight (8) years of January 12, 1987; but, if the age of the facility is greater than seven (7) years, secondary containment must be provided by the time the facility reaches fifteen (15) years of age, or within two (2) years of January 12, 1987, whichever comes later.

8.8.4.a.5. For tank systems that store or treat materials that become hazardous wastes subsequent to January 12, 1987, within the time intervals required in Sections 8.8.4.a.1 through 8.8.4.a.4 of these regulations, except that the date that a material becomes a hazardous waste must be used in place of January 12, 1987.

8.8.4.b. Secondary containment systems must be:

8.8.4.b.1. Designed, installed, and operated to prevent any migration of wastes or accumulated liquid out of the system to the soil, groundwater, or surface water at any time during the use of the tank system; and

8.8.4.b.2. Capable of detecting and collecting releases and accumulated liquids until the collected material is removed.

8.8.4.c. To meet the requirements of Section 8.8.4.b of these regulations, secondary containment systems must be at a minimum:

8.8.4.c.1. Constructed of or lined with materials that are compatible with the wastes 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);

8.8.4.c.2. 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;

8.8.4.c.3. 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 twenty-four (24) hours, or at the earliest practicable time if the owner or operator can demonstrate to the chief that existing detection technologies or site conditions will not allow detection of a release within twenty-four (24) hours; and

8.8.4.c.4. 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 twenty-four (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 Regional Administrator that removal of the released waste or accumulated precipitation cannot be accomplished within twenty-four (24) hours.

Note: If the collected material is a hazardous waste under Section 3.1.2 of these regulations, it is subject to management as a hazardous waste in accordance with all applicable requirements of these

regulations. 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 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 C.F.R. Part 302.

8.8.4.d. Secondary containment for tanks must include one or more of the following devices:

8.8.4.d.1. A liner (external to the tank);

8.8.4.d.2. A vault;

8.8.4.d.3. A double-walled tank; or

8.8.4.d.4. An equivalent device as approved by the chief.

8.8.4.e. In addition to the requirements of Sections 8.8.4.b through 8.8.4.d of these regulations, secondary containment systems must satisfy the following requirements:

8.8.4.e.1. External liner systems must be:

8.8.4.e.1.A. Designed or operated to contain one hundred percent (100%) of the capacity of the largest tank within its boundary;

8.8.4.e.1.B. 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.

8.8.4.e.1.C. Free of cracks or gaps; and

8.8.4.e.1.D. 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).

8.8.4.e.2. Vault systems must be:

8.8.4.e.2.A. Designed or operated to contain one hundred percent (100%) of the capacity of the largest tank within its boundary;

8.8.4.e.2.B. 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;

8.8.4.e.2.C. Constructed with chemical-resistant water stops in place at all joints (if any);

8.8.4.e.2.D. 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;

8.8.4.e.2.E. Provided with a means to protect against the formation of and ignition of vapors within the vault, if the waste being stored or treated:

8.8.4.e.2.E.i. Meets the definition of ignitable waste under Section 3.3.2 of these regulations; or

8.8.4.e.2.E.ii. Meets the definition of reactive waste under Section 3.3.3 of these regulations, and may form an ignitable or explosive vapor; and

8.8.4.e.2.F. 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.

8.8.4.e.3. Double-walled tanks must be:

8.8.4.e.3.A. 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.

8.8.4.e.3.B. Protected, if constructed of metal, from both corrosion of the primary tank interior and of the external surface of the outer shell; and

8.8.4.e.3.C. Provided with a built-in continuous leak detection system capable of detecting a release within twenty-four (24) hours, or at the earliest practicable time if the owner or operator can demonstrate to the chief, and the chief concludes, that the existing detection technology or site conditions would not allow detection of a release within twenty-four (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.

8.8.4.f. Ancillary equipment must be provided with secondary containment (e.g., trench, jacketing, doublewalled piping) that meets the requirements of Sections 8.8.4.b and 8.8.4.c of these regulations except for:

8.8.4.f.1. Aboveground piping -- exclusive of flanges, joints, valves, and other connections -- that are visually inspected for leaks on a daily basis;

8.8.4.f.2. Welded flanges, welded joints, and welded connections that are visually inspected for leaks on a daily basis; and

8.8.4.f.3. Sealless or magnetic coupling pumps that are visually inspected for leaks on a daily basis; and

8.8.4.f.4. Pressurized aboveground piping systems with automatic shut-off devices (e.g., excess flow checks valves, flow metering shutdown devices, loss of pressure actuated shut-off devices) that are visually

inspected for leaks on a daily basis.

8.8.4.g. The owner or operator may obtain a variance from the requirements of Section 8.8.4 of these regulations if the chief 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 groundwater 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 groundwater 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 Section 8.8.4.g.1 of these regulations, be exempted from the secondary containment requirements of Section 8.8.4 of these regulations.

8.8.4.g.1. In deciding whether to grant a variance based on a demonstration of equivalent protection of groundwater and surface water, the chief will consider:

8.8.4.g.1.A. The nature and quantity of the wastes;

8.8.4.g.1.B. The proposed alternate design and operation;

8.8.4.g.1.C. The hydrogeologic setting of the facility, including the thickness of soils present between the tank system and groundwater; and

8.8.4.g.1.D. All other factors that would influence the quality and mobility of the hazardous constituents and the potential for them to migrate to groundwater or surface water.

8.8.4.g.2. In deciding whether to grant a variance based on a demonstration of no substantial present or potential hazard, the chief will consider:

8.8.4.g.2.A. The potential adverse effects on groundwater, surface water, and land quality taking into account:

8.8.4.g.2.A.i. The physical and chemical characteristics of the waste in the tank system, including its potential for migration;

8.8.4.g.2.A.ii. The hydrogeological characteristics of the facility and surrounding land;

8.8.4.g.2.A.iii. The potential for health risks caused by human exposure to waste constituents;

8.8.4.g.2.A.iv. The potential for damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

8.8.4.g.2.A.v. The persistence and permanence of the potential adverse effects;

8.8.4.g.2.B. The potential adverse effects of a release on groundwater quality, taking into account:

8.8.4.g.2.B.i. The quantity and quality of groundwater and the direction of groundwater flow;

8.8.4.g.2.B.ii. The proximity and withdrawal rates of groundwater users;

8.8.4.g.2.B.iii. The current and future uses of groundwater in the area; and

8.8.4.g.2.B.iv. The existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater quality;

8.8.4.g.2.C. The potential adverse effects of a release on surface water quality, taking into account:

8.8.4.g.2.C.i. The quantity and quality of groundwater and the direction of groundwater flow;

8.8.4.g.2.C.ii. The patterns of rainfall in the region;

8.8.4.g.2.C.iii. The proximity of the tank system to surface waters;

8.8.4.g.2.C.iv. The current and future uses of surface waters in the area and any water quality standards established for those surface waters; and

8.8.4.g.2.C.v. The existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality; and

8.8.4.g.2.D. The potential adverse effects of a release on the land surrounding the tank system, taking into account:

8.8.4.g.2.D.i. The patterns of rainfall in the region; and

8.8.4.g.2.D.ii. The current and future uses of the surrounding land.

8.8.4.g.3. The owner or operator of a tank system, for which a variance from secondary containment had been granted in accordance with the requirements of Section 8.8.4.g.1 of these regulations, 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:

8.8.4.g.3.A. Comply with the requirements of Section 8.8.7 of these regulations, except as provided in Section 8.8.7.d of these regulations; and

8.8.4.g.3.B. Decontaminate or remove contaminated soil to the extent necessary to:

8.8.4.g.3.B.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

8.8.4.g.3.B.ii. Prevent the migration of hazardous waste or hazardous constituents to groundwater or surface water; and

8.8.4.g.3.C. If contaminated soil cannot be removed or decontaminated in accordance with Section 8.8.4.g.3.B of these regulations, comply with the requirement of Section 8.8.8.b of these regulations.

8.8.4.g.4. The owner or operator of a tank system, for which a variance from secondary containment had been granted in accordance with the requirements of Section 8.8.4.g.1 of these regulations, 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:

8.8.4.g.4.A. Comply with the requirements of Sections 8.8.7.a through 8.8.7.d of these regulations;

8.8.4.g.4.B. Prevent the migration of hazardous waste or hazardous constituents to groundwater or surface water, if possible, and decontaminate or remove contaminated soil. If contaminated soil cannot be decontaminated or removed or if groundwater has been contaminated, the owner or operator must comply with the requirements of Section 8.8.8.b of these regulations; and

8.8.4.g.4.C. If repairing, replacing, or reinstalling the tank system, provide secondary containment in accordance with the requirements of Sections 8.8.4.a through 8.8.4.f of these regulations or reapply for a variance from secondary containment and meet the requirements for new tank systems in Section 8.8.3 of these regulations 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 groundwater or surface water has not been contaminated.

8.8.4.h. The following procedures must be followed in order to request a variance from secondary containment:

8.8.4.h.1. The chief 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 Section 8.8.4.g of these regulations according to the following schedule:

8.8.4.h.1.A. For existing tank systems, at least twenty-four (24) months prior to the date that secondary containment must be provided in accordance with Section 8.8.4.a of these regulations.

8.8.4.h.1.B. For new tank systems, at least thirty (30) days prior to entering into a contract for installation;

8.8.4.h.2. As part of the notification, the owner or operator must also submit to the chief 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 Section 8.8.4.g.1 or 8.8.4.g.2 of these regulations;

8.8.4.h.3. The demonstration for a variance must be completed within one hundred and eighty (180) days after notifying the chief of an intent to conduct the demonstration; and

8.8.4.h.4. If a variance is granted under Section 8.8.4.h of these regulations, the chief will require the permittee to construct and operate the tank system in the manner that was demonstrated to meet the requirements for the variance.

8.8.4.h.4.A. All tank systems, until such time as secondary containment that meets the requirements of Section 8.8.4 of these regulations is provided, must comply with the following:

8.8.4.h.4.A.i. For non-enterable underground tanks, a leak test that meets the requirements of Section 8.8.2.b.5 of these regulations or other tank integrity method, as approved or required by the chief, must be conducted at least annually.

8.8.4.h.4.A.ii. For other non-enterable underground tanks, the owner or operator must either conduct a leak test as in Section 8.8.4.h.4.A.i of these regulations or develop a schedule and procedure for an assessment of the overall condition of the tank system by an independent, qualified registered 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 the 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 observed during the previous inspection, and the characteristics of the waste being stored or treated.

8.8.4.h.4.A.iii. For ancillary equipment, a leak test or other integrity assessment, as approved by the chief, 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.

8.8.4.h.4.A.iv. The owner or operator must maintain on file at the facility a record of the results of the assessments conducted in accordance with Sections 8.8.4.h.4.A.i through 8.8.4.h.4.A.iii of these regulations.

8.8.4.h.4.A.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 made pursuant to Sections 8.8.4.h.4.A.i through 8.8.4.h.4.A.iii of these regulations, the owner or operator must comply with the requirements of Section 8.8.7 of these regulations.

8.8.5. General Operating Requirements.

8.8.5.a. 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.

8.8.5.b. 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:

8.8.5.b.1. Spill prevention controls (e.g., check valves, dry disconnect couplings);

8.8.5.b.2. Overfill prevention controls (e.g., level sensing devices, high level alarms, automatic feed cutoff, or bypass to a standby tank); and

8.8.5.b.3. Maintenance of sufficient freeboard in uncovered tanks to prevent overtopping by wave or wind action or by precipitation.

8.8.5.c. The owner or operator must comply with the requirements of Section 8.8.7 of these regulations if a leak or spill occurs in the tank system.

8.8.6. Inspections.

8.8.6.a. The owner or operator must develop and follow a schedule and procedure for inspecting overfill controls.

8.8.6.b. The owner or operator must inspect at least once each operating day:

8.8.6.b.1. Aboveground portions of the tank system, if any, to detect corrosion or releases of waste;

8.8.6.b.2. 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; and

8.8.6.b.3. 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).

Note: Section 8.2.6.c of these regulations requires the owner or operator to remedy any deterioration or malfunction he finds. Section 8.8.7 of these regulations requires the owner or operator to notify the chief within twenty-four (24) hours of confirming a leak. Also, 40 C.F.R. Part 302 may require the owner or operator to notify the National Response Center of a release.

8.8.6.c. 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:

8.8.6.c.1. The proper operation of the cathodic protection system must be confirmed within six (6) months after initial installation and annually thereafter; and

8.8.6.c.2. All sources of impressed current must be inspected or tested 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.

8.8.6.d. The owner or operator must document in the operating record of the facility an inspection of those items in Sections 8.8.6.a through 8.8.6.c of these regulations.

8.8.7. Response To Leaks Or Spills And Disposition Of Leaking Or Unfit-For-Use Tank Systems.

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:

8.8.7.a. Cessation of use and prevention of 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.

8.8.7.b. Removal of waste from tank system or secondary containment system.

8.8.7.b.1. If the release was from the tank system, the owner or operator must, within twenty-four (24) hours after detection of the leak or, if the owner or 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.

8.8.7.b.2. If the material released was to a secondary containment system, all released materials must be removed within twenty-four (24) hours or in as timely a manner as is possible to prevent harm to human health and the environment.

8.8.7.c. 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:

8.8.7.c.1. Prevent further migration of the leak or spill to the soil or surface water; and

8.8.7.c.2. Remove and properly dispose of any visible contamination of the soil or surface water.

8.8.7.d. Notifications and reports.

8.8.7.d.1. Any release to the environment, except as provided in Section 8.8.7.d.2 of these regulations, must be reported to the chief within twenty-four (24) hours of its detection.

8.8.7.d.2. A leak or spill of hazardous waste is exempted from the requirements of Section 8.8.7.d.1 of these regulations if it is:

regulations, the owner or operator of a surface impoundment used for disposal of hazardous waste ceasing the receipt of hazardous waste prior to November 8, 1988 need not close such surface impoundment within one hundred and eighty (180) days after receiving the final volume of hazardous waste but may continue to receive waste provided that the owner or operator can satisfy the chief that the following requirements are or will be met:

8.6.4.c.1. The owner or operator of such surface impoundment will complete closure activities in accordance with the approved closure plan and within one hundred and eighty (180) days after receiving the final volume of waste at the surface impoundment. The chief may approve a longer period if the owner or operator complies with all applicable requirements for requesting a modification of the permit and demonstrates that the closure activities will, of necessity, take longer than one hundred and eighty (180) days to complete; and

8.6.4.c.2. The owner or operator has a hazardous waste management permit with an approved closure plan for such facility requiring compliance with all applicable provisions of these regulations as though it were an operating hazardous waste surface impoundment; and

8.6.4.c.3. The owner or operator institutes approved operating procedures designed to minimize the head created by any liquid in the surface impoundment; and either

8.6.4.c.4. The owner or operator makes a demonstration which is approved by the chief under Section 8.9.2.f.4.iv of these regulations; or

8.6.4.c.5. The surface impoundment contains a liner which is either:

8.6.4.c.5.A. A synthetic liner for which there is no evidence of leakage; or

8.6.4.c.5.B. A liner of compacted material at least three (3) feet thick with a permeability of no more than 1×10^{-7} centimeters per second; or

8.6.4.c.5.C. If the owner or operator demonstrates to the chief and the chief finds for the surface impoundment that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents into the groundwater or surface water beyond the point of compliance at least as effectively as such liners.

8.6.4.d. The demonstration referred to in Sections 8.6.4.a, 8.6.4.b, and 8.6.4.c.1 of these regulations must be made as follows:

8.6.4.d.1. The demonstrations in Section 8.6.4.a of these regulations must be made at least thirty (30) days prior to the expiration of the ninety-day period in Section 8.6.4.a of these regulations; and

8.6.4.d.2. The demonstration in Sections 8.6.4.b and 8.6.4.c.1 of these regulations must be made at least thirty (30) days prior to the expiration of the one hundred eighty-day period in Section 8.6.4.b of these regulations.

8.6.5. Disposal or Decontamination of Equipment.

During the partial and final closure periods, all contaminated equipment, structures, and soils must be properly disposed of or decontaminated unless otherwise specified in Section 8.9.7, 8.10.9, 8.11.11, or 8.12.11 of these regulations. By removing any hazardous wastes or hazardous constituents during partial or 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 Section 6 of these regulations.

8.6.6. Certification of Closure.

Within sixty (60) days of completion of closure of each hazardous waste surface impoundment, waste pile, and land treatment or landfill unit, and within sixty (60) days of the completion of final closure, the owner or operator must submit to the chief by registered mail a certification that the hazardous waste management unit or facility 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 an independent registered professional engineer. Documentation supporting the independent registered professional engineer's certification must be furnished to the chief upon request until he releases the owner or operator from the financial assurance requirements for closure under Section 13 of these regulations.

8.6.7. Post-Closure Care and Use of Property.

8.6.7.a.1. Post-closure care for each hazardous waste management unit subject to the requirements of Sections 8.6.7 through 8.6.9 and 15.4 of these regulations must begin after the completion of closure of the unit and continue for thirty (30) years after that date and must consist of at least the following:

8.6.7.a.1.A. Groundwater monitoring and reporting as applicable.

8.6.7.a.1.B. Maintenance of monitoring and waste containment systems as applicable.

8.6.7.a.1.C. All applicable post-closure regulations of Sections 8.9, 8.10, 8.11, 8.12, and 8.13 of these regulations.

8.6.7.a.2. 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 chief may, in accordance with the permit modification procedures in Section 11 of these regulations:

8.6.7.a.2.A. 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. For example, leachate or groundwater 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

8.6.7.a.2.B. 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. For example, leachate or groundwater monitoring results indicate a potential for migration of hazardous wastes at levels which may be harmful to human health and the environment.

8.6.7.5. The chief may require at partial and final closure the continuation of any of the security requirements of Section 8.2.5 of these regulations during part or all of the post-closure period when:

8.6.7.b.1. Hazardous wastes may remain exposed after completion of partial or final closure; or

8.6.7.b.2. Access by the public or domestic livestock may pose a hazard to human health.

8.6.7.c. Post-closure use of property on or in which hazardous wastes remain after closure must never be allowed to disturb the integrity of the final cover, liner(s), or any other components of any containment system, or the function of the facility's monitoring systems, unless the chief finds that the disturbance:

8.6.7.c.1. Is necessary to the proposed use of the property, and will not increase the potential hazard to human health or the environment; or

8.6.7.c.2. Is necessary to reduce a threat to human health or the environment.

8.6.7.d. All post-closure care activities must be in accordance with the provisions of the approved post-closure plan as specified in Section 8.6.8 of these regulations.

8.6.8. Post-Closure Plan; Amendment of Plan.

8.6.8.a. **Written Plan.** The owner or operator of a hazardous waste disposal unit must have a written post-closure plan. In addition, certain surface impoundments from which the owner or operator intends to remove or decontaminate the hazardous wastes at partial or final closure are required by Section 8.9.7.c of these regulations to have contingent post-closure plan. Owners or operators of surface impoundments not otherwise required to prepare contingent post-closure plans and owner and operators of waste piles must submit a post-closure plan to the chief within ninety (90) days from the date that the owner or operator or the chief determines that the hazardous waste management unit must be closed as a landfill subject to the requirements of Sections 8.6.7 through 8.6.8 and 15.4 of these regulations. The plan must be submitted with the Part B of the permit application in accordance with Section 11.5.1 of these regulations and will become a condition of the permit.

8.6.8.b. For each hazardous waste management unit subject to the requirements of Section 8.6.8 of these regulations, the post-closure plan must identify the activities that will be carried on after closure of each disposal unit and frequency of these activities, and include at least:

8.6.8.b.1. A description of the planned groundwater monitoring activities and frequencies at which they will be performed.

8.6.8.b.2. A description of the planned maintenance activities and frequencies at which they will be performed to ensure:

8.6.8.b.2.A. The integrity of the cap and final cover or other containment systems; and

8.6.8.b.2.B. The functioning of the monitoring equipment.

8.6.8.b.3. The name, address, and telephone number of the person or office to contact about the hazardous waste disposal unit or facility during the post-closure care period.

8.6.8.c. Until the final closure of a facility, a copy of the approved post-closure plan must be furnished to the chief upon request, including request by mail. After final closure has been certified, the person or office specified in Section 8.6.8.b.3 of these regulations must keep the approved post-closure plan during the remainder of the post-closure period.

8.6.8.d. Amendment of Plan. The owner or operator must request a permit modification to authorize a change in the approved post-closure plan in accordance with Section 11 of these regulations. The written request must include a copy of the amended post-closure plan for approval by the chief.

8.6.8.d.1. The owner or operator may submit a written request to the chief 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.

8.6.8.d.2. The owner or operator must submit a written request for a permit modification to authorize a change in the approved post-closure plan whenever:

8.6.8.d.2.A. Changes in operating plans or facility design affect the approved post-closure plan; or

8.6.8.d.2.B. There is a change in the expected year of final closure, if applicable; or

8.6.8.d.2.C. Events which occur during the active life of the facility, including partial and final closures, affect the approved post-closure plan.

8.6.8.d.3. The owner or operator must submit a written request for a permit modification at least sixty (60) days prior to the proposed change in facility design or operation, or no later than sixty (60) days after an unexpected event has occurred which has affected the post-closure plan. The owner or operator of a surface impoundment that intends to remove all hazardous waste at closure and is not otherwise required to submit a contingent post-closure plan under Section 8.9.7.c of these regulations and owners and operators of waste piles must submit a post-closure plan to the chief no later than ninety (90) days after the date that the owner or operator or the chief determines that

the hazardous waste management unit must be closed as a landfill, subject to the requirements of Section 8.11.11 of these regulations. The chief will approve, disapprove, or modify this plan in accordance with the procedures in Section 11 of these regulations and the approved post-closure plan will become a part of the permit.

8.6.8.d.4. The chief may request modifications to the plan under the conditions described in Section 8.6.8.d.2 of these regulations. The owner or operator must submit the modified plan no later than sixty (60) days after the chief's request, or no later than ninety (90) days if the unit is a waste pile or a surface impoundment not previously required to prepare a contingent post-closure plan. Any modifications requested by the chief will be approved, disapproved or modified in accordance with the procedures in Section 11 of these regulations.

8.6.9. Certification of Completion of Post-Closure Care.

No later than sixty (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 chief 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 an independent registered professional engineer. Documentation supporting the independent registered professional engineer's certification must be furnished to the chief upon request until he releases the owner or operator from the financial assurance requirements for post-closure care under Section 13 of these regulations.

8.7. Use and Management of Containers.

8.7.1. Applicability.

The regulations in Section 8.7 of these regulations apply to owners and operators of all hazardous waste management facilities that store containers of hazardous waste, except as Section 8.1 of these regulations provides otherwise.

Comment: Under Sections-3-4-6 Sections 3.1.7 and 3.4.4.c of these regulations 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 ~~Section-3-4-6~~ Section 3.1.7 of these regulations. In that event, management of the container is exempt from the requirements of ~~this--section~~ Section 8.7 of these regulations.

8.7.2. Conditions of Containers.

If a container holding hazardous waste is not in good condition (e.g., severe rusting or apparent structural defects) or if it begins to leak, the owner or operator must transfer the hazardous waste to a container that is in good condition or manage the waste in some other way that complies with the requirements of these regulations.

8.7.3. Compatibility of Waste With Containers.

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.

8.8.6.d. The owner or operator must document in the operating record of the facility an inspection of those items in Sections 8.8.6.a through 8.8.6.c of these regulations.

8.8.7. Response To Leaks Or Spills And Disposition Of Leaking Or Unfit-For-Use Tank Systems.

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:

8.8.7.a. Cessation of use and prevention of 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.

8.8.7.b. Removal of waste from tank system or secondary containment system.

8.8.7.b.1. If the release was from the tank system, the owner or operator must, within twenty-four (24) hours after detection of the leak or, if the owner or 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.

8.8.7.b.2. If the material released was to a secondary containment system, all released materials must be removed within twenty-four (24) hours or in as timely a manner as is possible to prevent harm to human health and the environment.

8.8.7.c. 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:

8.8.7.c.1. Prevent further migration of the leak or spill to the soil or surface water; and

8.8.7.c.2. Remove and properly dispose of any visible contamination of the soil or surface water.

8.8.7.d. Notifications and reports.

8.8.7.d.1. Any release to the environment, except as provided in Section 8.8.7.d.2 of these regulations, must be reported to the chief within twenty-four (24) hours of its detection.

8.8.7.d.2. A leak or spill of hazardous waste is exempted from the requirements of Section 8.8.7.d.1 of these regulations if it is:

8.8.7.d.2.A. Less than or equal to a quantity of one (1) pound; and

8.8.7.d.2.B. Immediately contained and cleaned up.

8.8.7.d.3. Within thirty (30) days of detection of a release to the environment, a report containing the following information must be submitted to the chief:

8.8.7.d.3.A. Likely route of migration of the release;

8.8.7.d.3.B. Characteristics of the surrounding soil, including soil composition, geology, hydrogeology, and climate;

8.8.7.d.3.C. 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 thirty (30) days, these data must be submitted to the chief as soon as they become available;

8.8.7.d.3.D. Proximity to downgradient drinking water, surface water, and populated areas; and

8.8.7.d.3.E. Description of response actions taken or planned;

8.8.7.e. Provision of secondary containment, repair, or closure.

8.8.7.e.1. Unless the owner or operator satisfies the requirements of Sections 8.8.7.e.2 through 8.8.7.e.4 of these regulations, the tank system must be closed in accordance with Section 8.8.8 of these regulations.

8.8.7.e.2. If the cause of the release was a spill that has not damaged the integrity of the system, the owner or operator may return the system to service as soon as the released waste is removed and repairs, if necessary, are made.

8.8.7.e.3. 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.

8.8.7.e.4. If the source of the release was a leak to the environment from a component of a tank system without secondary containment, the owner or operator must provide the component of the system from which the leak occurred with secondary containment that satisfies the requirements of Section 8.8.4 of these regulations 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 Section 8.8.7.f of these regulations are satisfied. If a component is replaced to comply with the requirements of Section 8.8.7.e.4 of these regulations, that component must satisfy the requirements for new tank systems or components in Sections 8.8.3 and 8.8.4 of these regulations. 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 Section 8.8.4 of these regulations prior to being returned to use.

8.8.7.f. Certification of major repairs. If the owner or operator has repaired a tank system in accordance with Section 8.8.7.e. of these regulations, and the repair has been extensive (e.g., installation of an internal liner or repair of a ruptured primary containment or secondary containment vessel), the tank system must not be returned to service unless the owner or operator has obtained a certification by an independent, qualified registered professional engineer, in accordance with Section 11.7.4. of these regulations, that the repaired system is capable of handling hazardous wastes without release for the intended life of the system. This certification must be submitted to the chief within seven (7) days after returning the tank system to use.

8.8.8. Closure And Post-Closure Care.

8.8.8.a. At closure of a tank system, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components, contaminated soils, and structures and equipment contaminated with waste and manage them as hazardous waste, unless Sections 3.1.2.d.1 and 3.1.2.d.2 of these regulations apply. The closure plan, closure activities, cost estimates for closure, and financial responsibility for tank systems must meet all of the requirements specified in Sections 8.6, 13, and 15 of these regulations.

8.8.8.b. If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in Section 8.8.8.a. of these regulations, 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 (Section 8.11.11 of these regulations). 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 Sections 8.6, 13, and 15 of these regulations.

8.8.8.c. If an owner or operator has a tank system that does not have secondary containment that meets the requirements of Sections 8.8.4.b through 8.8.4.f of these regulations and has not been granted a variance from the secondary containment requirements in accordance with Section 8.8.4.g of these regulations, then:

8.8.8.c.1. The closure plan for the tank system must include both a plan for complying with Section 8.8.8.a of these regulations and a contingent plan for complying with Section 8.8.8.b of these regulations.

8.8.8.c.2. A contingent post-closure plan for complying with Section 8.8.8.b of these regulations must be prepared and submitted as part of the permit application.

8.8.8.c.3. 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 Section 8.8.8.a of these regulations.

8.8.8.c.4. Financial assurance must be based on the cost estimates in Section 8.8.8.c.3 of these regulations.

8.8.8.c.5. 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 Sections 8.6, 13, and 15 of these regulations.

8.8.9. Special Requirements For Ignitable Or Reactive Wastes.

8.8.9.a. Ignitable or reactive waste must not be placed in tank systems, unless:

8.8.9.a.1. The waste is treated, rendered, or mixed before or immediately after placement in the tank system so that:

8.8.9.a.1.A. The resulting waste, mixture, or dissolved material no longer meets the definition of ignitable or reactive waste under Section 3.3.2 or 3.3.3 of these regulations; and

8.8.9.a.1.B. Section 8.2.8.b of these regulations is complied with; or

8.8.9.a.2. 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

8.8.9.a.3. The tank system is used solely for emergencies.

8.8.9.b. 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).

8.8.10. Special Requirements For Incompatible Wastes.

8.8.10.a. Incompatible wastes, or incompatible wastes and materials, must not be placed in the same tank system, unless Section 8.2.8 of these regulations is complied with.

8.8.10.b. 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 Section 8.2.8 of these regulations is complied with.

8.9. Surface Impoundments.

8.9.1. Applicability.

8.9.1.a. The regulations in Section 8.9 of these regulations apply to owners and operators of facilities that use surface impoundments to treat, store, or dispose of hazardous waste, except as Section 8.1 of

these regulations provides otherwise.

8.9.2. General Design Requirements.

8.9.2.a. A surface impoundment must be designed and constructed to provide maintenance of sufficient freeboard, and to prevent overtopping resulting from wave or wind action; normal and abnormal operation; malfunctions of level controllers, alarms, and other equipment; precipitation; human error; or any combination thereof. The freeboard shall not be less than 60 centimeters (2 feet) or an amount of freeboard other than 60 centimeters based on documentation acceptable to the chief that the specified amount of freeboard will prevent overtopping.

8.9.2.b. A surface impoundment must be designed and constructed so that any flow of waste into the impoundment can be immediately shut off in the event of overtopping or liner failure.

8.9.2.c. A surface impoundment must be designed and constructed to prevent discharge into or on the land, and to waters of the State (except discharges authorized by an NPDES permit during the life of the impoundment) by use of a liner system and leachate detection, collection and removal system which complies with Section 8.9.4 of these regulations, except as provided in Section 8.9.2.f of these regulations.

8.9.2.d. Dikes must be designed and constructed with sufficient structural integrity to prevent massive failure without dependence on any liner system included in the surface impoundment design.

8.9.2.e. A leachate detection, collection, and removal system must be designed and constructed so that liquid will flow freely from the collection system to prevent the creation of pressure head within the collection system in excess of that necessary to cause the liquid to flow freely.

8.9.2.f.1. Existing facilities are exempt from the requirements outlined in Sections 8.9.2.c, 8.9.2.e, 8.9.4.a.1, 8.9.4.c, 8.9.4.d, 8.9.6, 8.9.10.c.2, and 8.9.10.d of these regulations, provided that Section 8.9.2.f.2 of these regulations is complied with.

8.9.2.f.2. The owner or operator, in order to qualify for the exemption in Section 8.9.2.f.1 of these regulations, must demonstrate that statistically significant increases of hazardous constituents do not occur in the groundwater or surface water during its active life and the post closure period, except as provided in Section 8.9.2.f.4 of these regulations.

8.9.2.f.3. If statistically significant increases of hazardous constituents are detected as outlined in Section 8.13.8.d of these regulations in the groundwater beneath the facility (including the regulated unit) the owner or operator must comply with the corrective action outlined in Section 8.13.9 of these regulations (if groundwater contamination has been determined).

8.9.2.f.4. If the owner or operator determines that the corrective action program being implemented under Section 8.13.9 of these

regulations is insufficient for causing cessation of hazardous waste constituents migration, then the unit must be closed. However, if it is determined that the corrective action will adequately arrest and remove the contamination, the owner may choose one of the four options which will become part of the conditions of the permit:

~~8.9.2.f.4.i~~ 8.9.2.f.4.A. Retrofit the unit with liners; in accordance with Section 8.9.4.a.1 of these regulations;

~~8.9.2.f.4.ii~~ 8.9.2.f.4.B. Stop the leak;

~~8.9.2.f.4.iii~~ 8.9.2.f.4.C. Continue the operation of the unit, while concurrently developing/implementing an alternate treatment, storage, or disposal method, for a period of five (5) years at which time the unit must be closed; or

~~8.9.2.f.4.iv~~ 8.9.2.f.4.D. Continue the operation of the unit provided a demonstration can be made and approved by the chief that no adverse impact to human health or to the environment will result from the continued operation of the unit during the active life and closure and post-closure period, provided that the facility continues to comply with an approved corrective action program. Such demonstration must include and discuss the following:

~~8.9.2.f.4.iv.A~~ 8.9.2.f.4.D.i. Potential adverse effects on groundwater quality, considering:

~~8.9.2.f.4.iv.A.1~~ 8.9.2.f.4.D.i.1. The physical and chemical characteristics of the waste in the regulated unit, including its potential for migration;

~~8.9.2.f.4.iv.A.2~~ 8.9.2.f.4.D.i.2. The hydrogeological characteristics of the facility and surrounding land;

~~8.9.2.f.4.iv.A.3~~ 8.9.2.f.4.D.i.3. The quantity of groundwater and the direction of groundwater flow;

~~8.9.2.f.4.iv.A.4~~ 8.9.2.f.4.D.i.4. The proximity and withdrawal rates of groundwater users;

~~8.9.2.f.4.iv.A.5~~ 8.9.2.f.4.D.i.5. The current and future uses of groundwater in the area;

~~8.9.2.f.4.iv.A.6~~ 8.9.2.f.4.D.i.6. The existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater quality;

~~8.9.2.f.4.iv.A.7~~ 8.9.2.f.4.D.i.7. The potential for health risks caused by human exposure to waste constituents;

~~8.9.2.f.4.iv.A.8~~ 8.9.2.f.4.D.i.8. The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

~~8.9.2.f.4.iv.A.9~~ 8.9.2.f.4.D.i.9. The persistence and permanence of the potential adverse effects; and

8.9.2.f.4.iv.B- 8.9.2.f.4.D.ii. Potential adverse effects on hydraulically-connected surface water quality, considering:

8.9.2.f.4.iv.B-4- 8.9.2.f.4.D.ii.1. The volume and physical and chemical characteristics of the waste in the regulated unit;

8.9.2.f.4.iv.B-2- 8.9.2.f.4.D.ii.2. The hydrogeological characteristics of the facility and surrounding land;

8.9.2.f.4.iv.B-3- 8.9.2.f.4.D.ii.3. The quantity and quality of groundwater and the direction of groundwater flow;

8.9.2.f.4.iv.B-4- 8.9.2.f.4.D.ii.4. The patterns of rainfall in the region;

8.9.2.f.4.iv.B-5- 8.9.2.f.4.D.ii.5. The proximity of the regulated unit to surface waters;

8.9.2.f.4.iv.B-6- 8.9.2.f.4.D.ii.6. The current and future uses of surface waters in the area and any water quality standards established for those surface waters;

8.9.2.f.4.iv.B-7- 8.9.2.f.4.D.ii.7. The existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality;

8.9.2.f.4.iv.B-8- 8.9.2.f.4.D.ii.8. The potential for health risks caused by human exposure to waste constituents;

8.9.2.f.4.iv.B-9- 8.9.2.f.4.D.ii.9. The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

8.9.2.f.4.iv.B-10- 8.9.2.f.4.D.ii.10. The persistence and permanence of the potential adverse effects.

8.9.2.f.4.iv.B-6- 8.9.2.f.4.D.iii. In making any determination under Section 8.9.2.f.4 of these regulations concerning the use of groundwater in the area around the facility, the chief will consider any identification of underground sources of drinking water and exempted aquifers made under the West Virginia Administrative Regulations, Water Resources Board, Series-IX-(1983) Series 9.

8.9.3. Operating Requirements.

8.9.3.a. A surface impoundment must be operated and maintained to prevent any overtopping resulting from wind and wave action; overfilling; normal and abnormal operation; malfunctions of level controllers, alarms, and other equipment; precipitation; human error; or any combination thereof.

8.9.3.b. A surface impoundment must be operated to maintain at least the amount of freeboard specified by the chief in the permit.

8.9.3.c. A leachate detection, collection, and removal system installed to comply with Section 8.9.4.a of these regulations must be operated so that leachate flows freely from the collection system and is removed as

it accumulates or with sufficient frequency to prevent backwater within the collection system.

8.9.3.d. Earthen dikes must be kept free of:

8.9.3.d.1. Perennial woody plants with root systems which could affect the structural integrity of the dike; and

8.9.3.d.2. Burrowing mammals which could remove earthen materials upon which the structural integrity of the dike is dependent or creates leaks through burrows in the dike.

8.9.3.e. Run on must be diverted away from a surface impoundment.

8.9.4. Specific Design Requirements.

8.9.4.a. A surface impoundment must be designed to prevent discharge into the land and State waters during its life and must have:

8.9.4.a.1. A double liner system that is designed, constructed, and installed to prevent any migration of wastes or leachate or both out of the impoundment to the adjacent subsurface, soil, or groundwater or surface water at any time during the operating life, closure, and the post-closure period (where applicable) of the impoundment. The primary liner (i.e., the liner in contact with the waste) must be constructed of materials that prevent wastes or leachate or both from passing into the liner during the operating life, closure, and the post-closure period (where applicable) of the facility. All liners must be:

~~8.9.4.a.1.i~~ 8.9.4.a.1.A. Constructed of materials that are chemically resistant to the waste and leachate expected to be generated and of sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste and leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation. The liner will be tested for compatibility with the waste and leachate expected to be generated to determine possible effects on the liner materials prior to installation.

~~8.9.4.a.1.ii~~ 8.9.4.a.1.B. Placed upon a foundation or base capable of providing support to the liners and resistance to pressure gradients above and below the liners to prevent failure of the liners due to settlement, compression, or uplift; and

~~8.9.4.a.1.iii~~ 8.9.4.a.1.C. Installed to cover all surrounding earth likely to be in contact with the waste and leachate; and

~~8.9.4.a.1.iv~~ 8.9.4.a.1.D. Constructed to be free of lenses, cracks, channels, holes, or other structural nonuniformities; and

~~8.9.4.a.1.v~~ 8.9.4.a.1.E. If a soil-based or admixed liner is to be used as the secondary liner (i.e., the liner underneath the primary liner), then such liner must be at least 90 centimeters (3 feet) thick with a maximum saturated hydraulic conductivity of no more than 1×10^{-7} cm/sec throughout the total thickness and area of the liner;

8.9.4.a.2. An impoundment (including the base of the lower most liner

components) which must be located at a minimum of three (3) feet above the highest known seasonal water table elevation. This three-foot distance may be achieved by elevating the surface impoundment artificially or by the nonmechanical lowering of the water table at the location. However, no mechanical means (i.e., pumps) may be used to lower the water table. All plans for alteration of the water level must be approved by the chief and will become a part of the hazardous waste management permit.

8.9.4.a.3. A leachate detection, collection, and removal system beneath the liner(s) in contact with the waste (i.e., must be situated between the liners in the double liner system) to detect, contain, collect, and remove any discharge from the liner(s) in contact with the waste.

8.9.4.b. Earthen dikes must have a protective cover such as grass or rock to minimize wind and water erosion and to preserve the structural integrity of the dike.

8.9.4.c. A leachate detection, collection, and removal system beneath the liner in contact with the waste (i.e., must be situated between the liners in the double liner system) to detect, contain, collect, and remove any discharge from the liner in contact with the waste at any time during the operating life, closure, and the post-closure period (where applicable) of the impoundment.

8.9.4.d. The owner or operator and a registered professional engineer must submit to the chief a certification that the facility has been designed and constructed in compliance with Section 8.9.4 of these regulations prior to placement of wastes into the impoundment.

8.9.5. Inspections and Testing.

8.9.5.a. During construction or installation, liner systems must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, and foreign materials).

8.9.5.a.1. Soil-based and admixed liner systems must be tested for compaction, density, moisture content, and permeability, and inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-conformities that may cause an increase in the permeability of the liner; and

8.9.5.a.2. Manufactured liner materials (e.g., membranes, sheets, and coatings) must be inspected to ensure tight seams and joints and the absence of tears or blisters.

8.9.5.a.3. Upon discovery of such imperfections, the repair of the liner must be completed prior to placement of the wastes into the impoundment.

8.9.5.a.4. The leachate detection, collection, and removal system must be inspected for cracks, breaks, loose seams and joints, clogging, areas of structural stress, and any other faults or conditions which may result in collapse or failure of the system.

8.9.5.a.5. Results of such tests and repairs must be certified in writing by a registered professional engineer.

8.9.5.b. The owner or operator must inspect:

8.9.5.b.1. A surface impoundment, including the leachate detection, collection, and removal system, at least once each day to ensure compliance with Sections 8.9.3.a through 8.9.3.c of these regulations and to detect any leaks or other failures of the impoundment.

8.9.5.b.2. Each surface impoundment, including dikes, berms, and vegetation surrounding the dike, at least once a week and after storms to detect any evidence of or potential for leaks from the impoundment, erosion of dikes, and to ensure compliance with Section 8.9.3.d of these regulations.

8.9.5.c. The structural integrity of any dike, including that portion of any dike which provides freeboard, must be certified against massive failure by a registered professional engineer prior to the issuance or reissuance of a permit; or if the impoundment is not in service and has not been inspected and maintained as required under Section 8.9.5.b of these regulations, prior to being placed in service and after construction or prior to being returned to service.

8.9.5.c.1. In certifying the structural integrity of the dike it must be established that the dike will withstand:

~~8.9.5.e-4-i~~ 8.9.5.c.1.A. The stress of the pressure head of liquids placed into the impoundment;

~~8.9.5.e-4-ii~~ 8.9.5.c.1.B. The weakening effect of earth materials being scoured due to leakage from the impoundment through and under the dike without relying on any liner system;

~~8.9.5.e-4-iii~~ 8.9.5.c.1.C. The weakening effect of earth materials being scoured due to leakage from the impoundment through and under the dike assuming leaks develop in the liner system; and

~~8.9.5.e-4-iv~~ 8.9.5.c.1.D. The weakening effect of any piping included in the impoundment's construction.

8.9.6. Liner System Repairs; Contingency Plans.

8.9.6.a. Whenever there is any indication of a possible failure of the liner system, that system must be inspected in accordance with the provisions of the liner system evaluation and repair plan required by Section 8.9.6.d of these regulations. Indications of possible failure of the liner system include at least an unplanned and non-sudden drop in liquid level in the impoundment, liquid detection in the leachate detection system, evidence of leakage or the potential for leakage in the dike, erosion of the dike, apparent or potential deterioration of the liner(s) based on observation or test samples of the liner materials, any mishandling of wastes placed in the impoundment, and foreign objects in the impoundment.

8.9.6.b. Whenever there is a positive indication of an unplanned sudden drop in liquid level in the impoundment, or active leakage through the dike, the impoundment must be removed from service.

8.9.6.c. If the surface impoundment must be removed from service as

required by Section 8.9.6.b of these regulations, the owner or operator must:

8.9.6.c.1. Immediately shut off the flow or stop the addition of wastes into the impoundment.

8.9.6.c.2. Immediately contain any surface leakage which has occurred or is occurring and cause such leak(s) to be stopped.

8.9.6.c.3. Immediately notify the chief through the Division of Water Resources' Emergency Notification Number 1-800-642-3074.

8.9.6.c.4. If all leaks specified in Section 8.9.6.b of these regulations, including leaks not evident at the surface, cannot be stopped by any other means, empty the impoundment.

8.9.6.c.5. Within fifteen (15) days after detecting the leak, submit to the chief a written report of the problem and corrective measures taken.

8.9.6.c.6. Take any other steps necessary to stop or prevent catastrophic failure.

8.9.6.d. As part of the contingency plan required in Section 8.4 of these regulations, the owner or operator must specify:

8.9.6.d.1. A procedure for complying with the requirements of Section 8.9.6.c of these regulations; and

8.9.6.d.2. A liner system repair plan describing testing and monitoring techniques; procedures to be followed to evaluate the integrity of the liner system in the event of a possible failure; a schedule of actions to be taken in the event of a possible failure; and a description of the repair techniques to be used in the event of leakage due to liner system failure or deterioration which does not require the impoundment to be removed from service.

8.9.6.e. No surface impoundment that has been removed from service in accordance with Section 8.9.6.b of these regulations may be restored to service unless:

8.9.6.e.1. The liner system and leachate detection, collection, and removal system have been repaired; and

8.9.6.e.2. The liner system and the leachate detection, collection, and removal system have been re-certified by a registered professional engineer as meeting the design specifications approved in the permit.

8.9.6.f. A surface impoundment that has been removed from service in accordance with Section 8.9.6.b of these regulations and that is not being repaired must be closed in accordance with Section 8.9.7 of these regulations.

8.9.6.g. All wastes removed from the impoundment must be managed as a hazardous waste in compliance with all applicable requirements. Any point source discharge to waters of the State is subject to the requirements of the State Water Pollution Control Act and all

regulations promulgated thereunder.

8.9.7. Closure.

8.9.7.a. At closure, all hazardous waste and hazardous waste residues must be removed from the impoundment, except as provided in Section 8.9.10 of these regulations. Any component of the surface impoundment or any appurtenant structures or equipment (e.g., discharge platforms and pipes, baffles, skimmers, aerators, or other equipment) containing or contaminated with hazardous waste or hazardous waste residues must be decontaminated or removed.

8.9.7.b. At closure, as throughout the operating period, unless the owner or operator can demonstrate in accordance with these regulations that the waste removed from the surface impoundment 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.

8.9.7.c. An owner or operator who plans to close a surface impoundment exempted from the liner requirements pursuant to Section 8.9.2.f of these regulations must:

8.9.7.c.1. Prepare a contingent plan for complying with Sections 8.9.10.a.1, 8.9.10.a.2, and 8.9.10.b of these regulations in case not all contaminated subsoils can be practicably removed at closure; and

8.9.7.c.2. Prepare a contingent post-closure plan for complying with Section 8.9.10.c of these regulations, except Section 8.9.10.c.2 of these regulations, in case not all contaminated subsoils can be practicably removed at closure.

8.9.8. Special Requirements for Ignitable or Reactive Waste.

Ignitable or reactive waste must not be placed in a surface impoundment unless:

8.9.8.a. The waste is treated, rendered, or mixed before or immediately after placement in the impoundment so that:

8.9.8.a.1. The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under Section 3.3.2 or 3.3.4 of these regulations; and

8.9.8.a.2. Section 8.2.8 of these regulations is complied with; or

8.9.8.b. 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

8.9.8.c. The surface impoundment is used solely for emergencies.

8.9.9. Special Requirements for Incompatible Wastes.

8.9.9.a. Incompatible wastes, or incompatible wastes and other materials, must not be placed in the same surface impoundment, unless Section 8.2.8.b of these regulations is complied with.

8.9.10. Additional Requirements for Impoundments Used for Disposal of

Hazardous Wastes.

8.9.10.a. In addition to all the other requirements of Section 8.9 of these regulations, when an owner or operator leaves wastes, waste residues, or contaminated materials in place in an impoundment upon closure, he must comply with the following as part of the closure procedures:

8.9.10.a.1. Eliminate the free liquids contained in the impoundment by removing the liquid wastes and by solidifying the remaining wastes and waste residues left in place;

8.9.10.a.2. Stabilize the remaining wastes to a bearing capacity sufficient to support the final cover;

8.9.10.b. Prior to beginning the post closure period, the owner or operator must cover the impoundment with a final cover designed and constructed to:

8.9.10.b.1. Provide long-term minimization of migration of liquids through the closed impoundment;

8.9.10.b.2. Function with minimum maintenance;

8.9.10.b.3. Promote drainage and minimize erosion or abrasion of the cover;

8.9.10.b.4. Accommodate settling and subsidence so that the cover's integrity is maintained; and

8.9.10.b.5. Have a permeability less than or equal to the least permeable component of the liner system or 1×10^{-7} cm/sec whichever value is less.

8.9.10.c. After final closure, the owner or operator must comply with all post closure requirements contained in Section 8.6.7, 8.6.8, 13, 15.1, and 15.3 of these regulations including maintenance and monitoring throughout the post closure period (specified in the permit under Section 8.6.7 of these regulations). The owner or operator must:

8.9.10.c.1. Maintain the integrity and effectiveness of the cover including making repairs to the cover as necessary to correct the effects of settling, subsidence, erosion, or other events;

8.9.10.c.2. Continue to operate the leachate collection and removal system for the entire post closure period;

8.9.10.c.3. Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of Section 8.13 of these regulations;

8.9.10.c.4. Prevent run-on and runoff from eroding or otherwise damaging the cover; and

8.9.10.d. During the post closure period, the owner or operator must:

8.9.10.d.1. Inspect daily and maintain the leachate detection,

collection, and removal system. If leachate is detected in the detection system between the liners, the owner or operator must:

~~8.9.10.d.1.i.~~ 8.9.10.d.1.A. Immediately notify the chief through the Division of Water Resources' Emergency Notification Number 1-800-642-3074.

~~8.9.10.d.1.ii.~~ 8.9.10.d.1.B. Within fifteen (15) days after detecting the leak, submit to the chief a written report of the problem and corrective measures taken.

8.9.10.d.2. Unless the owner or operator can demonstrate otherwise, the leachate must be managed as a hazardous waste in accordance with all regulations governing the generation of such wastes.

8.9.10.d.3. If it is determined that the liner(s) is leaking, the owner or operator must begin the remedial actions set forth in the contingency plan specified in the permit which shall at least include plans for repairing the breach in the liner and preventing the continued migration of the leachate.

8.10. Waste Piles.

8.10.1. Applicability.

8.10.1.a. The regulations in Section 8.10 of these regulations apply to owners and operators of facilities that store or treat hazardous waste in piles, except as Section 8.1 of these regulations provides otherwise.

8.10.1.b. (Reserved).

8.10.1.c. Owners and operators of waste piles used to store or treat only hazardous wastes that do not contain free liquids are not subject to regulation under Sections 8.10.2, 8.10.3, 8.10.4, 8.10.5, and 8.10.6 of these regulations with respect to these piles, provided that:

8.10.1.c.1. Liquids or materials containing free liquids are not placed in the pile;

8.10.1.c.2. The pile is inside or under a structure that provides protection from precipitation so that neither runoff nor leachate is generated;

8.10.1.c.3. The pile is protected from surface water run-on by the structure or in some other manner;

8.10.1.c.4. The pile is designed and operated to control dispersal of the waste by wind, where necessary, by means other than wetting;

8.10.1.c.5. The pile will not generate leachate through decomposition or other reactions; and

8.10.1.c.6. The pile does not discharge hazardous wastes into State waters.

8.10.2. Design and Operating Requirements.

8.10.2.a. A waste pile must have:

8.10.2.a.1. A liner that is designed, constructed, and installed to prevent discharge into or on the land and waters of the State during the active life (including the closure period) of the waste pile. The liner must be:

~~8.40.2.a.1.i.~~ 8.10.2.a.1.A. 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;

~~8.40.2.a.1.ii.~~ 8.10.2.a.1.B. 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

~~8.40.2.a.1.iii.~~ 8.10.2.a.1.C. At least three (3) feet above the seasonal high water table; and

~~8.40.2.a.1.iv.~~ 8.10.2.a.1.D. Installed to cover all surrounding earth likely to be in contact with the waste or leachate; and

8.10.2.a.2. 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 chief will specify conditions for design and operation in the permit to insure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system must be:

~~8.40.2.a.2.i.~~ 8.10.2.a.2.A. Constructed of materials that are:

~~8.40.2.a.2.i.A.~~ 8.10.2.a.2.A.i. Chemically resistant to the waste managed in the pile and the leachate expected to be generated; and

~~8.40.2.a.2.i.B.~~ 8.10.2.a.2.A.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

~~8.40.2.a.2.ii.~~ 8.10.2.a.2.B. Designed and operated to function without clogging through the operating life and scheduled closure of the waste pile.

8.10.2.a.3. If the collected leachate or runoff is a hazardous waste under Section 3 of these regulations, it must be managed as a hazardous waste in accordance with all applicable requirements. If collected leachate or runoff is discharged through a point source to waters of the State, it is subject to the requirements of the State Water Pollution Control Act and all regulations promulgated thereunder.

8.10.2.b. 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.

8.10.2.c. The owner or operator must design, construct, operate, and maintain a runoff management system to collect and control at least the water volume resulting from a ~~24-hour, 25-year~~ 25-year, 24-hour storm.

8.10.2.d. Collection and holding facilities (e.g., tanks or basins) associated with run-on and runoff control systems must be emptied or otherwise managed expeditiously after any precipitation event to maintain design capacity of the system.

8.10.2.e. The pile must be designed and operated to control dispersal of the waste by wind or water.

8.10.2.f. The chief will specify in the permit all conditions for design and operation practices that are necessary to ensure that the requirements of ~~this section~~ Section 8.10.2 of these regulations are satisfied.

8.10.2.g. A liner system must be protected from plant growth which could puncture any component of the system.

8.10.2.h. A liner system must have a containment life equal to or greater than the life of the pile.

8.10.3. Specific Requirements for Double-Lined Waste Piles.

8.10.3.a. The owner or operator of a double-lined waste pile must meet the following:

8.10.3.a.1. The pile (including its underlying liners) must be located at least three (3) feet above the seasonal high water table;

8.10.3.a.2. The pile must be underlain by two liners which are designed and constructed in a manner that prevents the migration of liquids into or out of the space between the liners. Both liners must meet all the specifications in Section 8.10.2.a.1 of these regulations.

8.10.3.a.3. A leak detection system must be designed, constructed, maintained, and operated between the liners to detect any migration of liquids into the space between the liners;

8.10.3.a.4. The pile must have a leachate collection and removal system above the top liner that is designed, constructed, maintained and operated in accordance with Section 8.10.2.a.2 of these regulations.

8.10.3.b. If liquid leaks into the leak detection system, the owner or operator must:

8.10.3.b.1. Immediately notify the chief through the Division of Water Resources' Emergency Notification Number 1-800-642-3074;

8.10.3.b.2. Within fifteen (15) days after detecting the leak, submit to the chief a written report of the problem and corrective measures taken; and

8.10.3.b.3. Comply with the provisions of Section 8.10.6 of these regulations.

8.10.4. Specific Requirements for Single-Lined Waste Piles; Inspection of Liners.

8.10.4.a. The owner or operator of a single-lined pile must meet the following conditions:

8.10.4.a.1. The wastes in the pile must be removed periodically, and the liner must be inspected for deterioration, cracks, or other conditions that may result in leaks. The frequency of inspection will be specified in the inspection plan required in Section 8.2.6 of these regulations and must be based on the potential for the liner (base) to crack or otherwise deteriorate under the conditions of operation (e.g., waste type, rainfall, loading rates, and subsurface stability).

8.10.4.a.2. The liner must be of sufficient strength and thickness to prevent failure due to puncture, cracking, tearing, or other physical damage from equipment used to place waste in or on the pile or to clean and expose the liner surface for inspection.

8.10.4.a.3. The requirements listed in Sections 8.10.2.a and 8.10.2.b of these regulations.

8.10.4.b. If deterioration, a crack, or other condition is identified that is causing or could cause a leak, the owner or operator must:

8.10.4.b.1. Immediately notify the chief through the Division of Water Resources' Emergency Notification Number 1-800-642-3074.

8.10.4.b.2. Within fifteen (15) days after detecting the leak, submit to the chief a written report of the problem and corrective measures taken; and

8.10.4.b.3. Comply with the provisions of Section 8.10.6 of these regulations.

8.10.5. Monitoring and Inspection.

8.10.5.a. During and immediately after construction or installation, liner and cover systems must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, and foreign materials).

8.10.5.a.1. Soil-based and admixed liners must be tested for compaction density, moisture content, permeability, and inspected for imperfections including lenses, cracks, channels, root holes, or other structural nonconformities that may cause an increase in the permeability of the liner.

8.10.5.a.2. Synthetic liner materials (e.g., membranes, sheets, and coatings) must be inspected to ensure tight seams and joints and the absence of tears or blisters.

8.10.5.a.3. Upon discovery of any imperfections, the repair of the liner must be completed prior to placement of the wastes into the liner.

8.10.5.a.4. The results of such tests and repairs must be certified in writing by the owner or operator and a registered professional

engineer.

8.10.5.a.5. The leachate detection, collection, and removal system must be inspected for cracks, breaks, loose seams and joints, clogging, areas of structural stress, and any other faults or conditions which may result in collapse or failure of the system.

8.10.5.b. While a waste pile is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

8.10.5.b.1. Deterioration, malfunctions, or improper operation of run-on and runoff control systems;

8.10.5.b.2. The presence of liquids in the leachate detection systems, where installed to comply with Section 8.10.3 of these regulations;

8.10.5.b.3. Proper functioning of wind dispersal control systems, where present; and

8.10.5.b.4. The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

8.10.6. Liner System Repairs; Contingency Plan.

8.10.6.a. Whenever there is any indication of a possible failure of liner system, that system must be inspected in accordance with the provisions of the liner system evaluation and repair plan required by Section 8.10.6.d of these regulations. Indications of possible failure of the liner system include liquid detected in the leachate detection system (where applicable), evidence of leakage or the potential for leakage in the base, erosion of the base, or apparent or potential deterioration of the liner(s) based on observation or test samples of the liner materials.

8.10.6.b. Whenever there is a positive indication of a failure of the liner system, the waste pile must be removed from service, and the leachate removed and treated by method and schedule approved by the chief. Indications of positive failure of the liner system (where applicable) or a breach (e.g., a hole, tear, crack, or separation) in the base.

8.10.6.c. If the waste pile must be removed from service as required by Section 8.10.6.b of these regulations, the owner or operator must:

8.10.6.c.1. Immediately stop adding waste to the pile.

8.10.6.c.2. Immediately contain any leakage which has or is occurring and treat the leachate by a method and schedule approved by the chief.

8.10.6.c.3. Immediately cause the leak to be stopped.

8.10.6.c.4. If the leak cannot be stopped by any other means, remove the waste from the base.

8.10.6.d. As part of the contingency plan required in Section 8.4 of these regulations the owner or operator must specify:

8.10.6.d.1. All procedures, and design and operating specifications for complying with the requirements of Section 8.10.6.c of these regulations; and

8.10.6.d.2. A liner system evaluation and repair plan describing testing and monitoring techniques; procedures to be followed to evaluate the integrity of the liner system in the event of a possible failure; a schedule of actions to be taken in the event of a possible failure; and a description of the repair techniques to be used in the event of leakage due to liner system failure or deterioration which does not require the waste pile to be removed from service.

8.10.6.e. No waste pile that has been removed from service in accordance with Section 8.10.6.b of these regulations may be restored to service unless:

8.10.6.e.1. The liner system has been repaired; and

8.10.6.e.2. The liner system has been certified by a registered professional engineer as meeting the design specifications approved in the permit and that to the best of his knowledge and opinion the leak has been stopped.

8.10.6.f. A waste pile that has been removed from service in accordance with Section 8.10.6.b of these regulations and that is not being repaired must be closed in accordance with Section 8.10.9 of these regulations.

8.10.6.g. All wastes removed from the waste pile must be managed as a hazardous waste in compliance with all applicable requirements. Any point source discharge to waters of the State is subject to the requirements of the State Water Pollution Control Act and all regulations promulgated thereunder.

8.10.7. Special Requirements for Ignitable or Reactive Waste.

8.10.7.a. Ignitable or reactive waste must not be placed in a pile unless the waste is treated, rendered, or mixed before or immediately after placement in the pile so that:

8.10.7.a.1. Addition of the waste to an existing pile results in the waste or mixture no longer meeting the definition of ignitable or reactive waste and complies with Section 8.2.8 of these regulations; or

8.10.7.a.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.

8.10.8. Special Requirements for Incompatible Wastes.

8.10.8.a. Incompatible wastes, or incompatible wastes and other materials, must not be placed in the same pile, unless Section 8.2.8 of these regulations is complied with.

8.10.8.b. 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

which will prevent fires, explosions, gaseous emissions, leaching, or other discharge which could result from the contact or mixing of incompatible wastes or materials.

8.10.8.c. Hazardous waste must not be piled in the same base where incompatible wastes or materials were previously piled, unless the base has been decontaminated sufficiently to ensure compliance with Section 8.2.8 of these regulations.

8.10.9. Closure.

8.10.9.a. At closure, all hazardous waste and hazardous waste residues must be removed from the pile, except as provided in Section 8.10.9.c of these regulations. Any component of the liner system containing or contaminated with hazardous waste or hazardous waste residues must be decontaminated or removed.

8.10.9.b. At closure, as throughout the operating period, unless the owner or operator can demonstrate in accordance with these regulations that the waste removed from the waste pile is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with applicable requirements listed in Sections 8.2.2 through 8.2.8 of these regulations.

8.10.9.c. If, upon closure, the owner or operator determines that all hazardous wastes and hazardous waste residues can not be removed as required by Section 8.10.9.a of these regulations due to technical infeasibility, then the owner or operator must submit an application for modifying the permit pursuant to Section 11.17 of these regulations. Such application must contain all information which demonstrates compliance with the requirements for managing a landfill, pursuant to Sections 8.11, 11, and 13 of these regulations.

8.11. Landfills.

8.11.1. Applicability.

The regulations in Section 8.11 of these regulations apply to owners and operators of facilities that dispose of hazardous waste in landfills, except as Section 8.1 of these regulations provides otherwise.

8.11.2. Design and Operating Requirements.

8.11.2.a. A landfill must have:

8.11.2.a.1. A double liner system that is designed, constructed, and installed to prevent any migration of wastes or leachate or both out of the landfill to the adjacent subsurface, soil or groundwater or surface water at any time during the operating life, closure and the post closure period of the landfill. The primary liner (i.e., the liner in contact with the waste) must be constructed of materials that prevent wastes or leachate or both from passing into the liner during the operating life, closure, and the post closure period of the facility. All liners must be:

~~8.11.2.a.1.A.~~ 8.11.2.a.1.A. Constructed of materials that are

chemically resistant to the waste and leachate expected to be generated and of sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste and leachate installation, and the stress of daily operation. The liner will be tested for compatibility with the waste and leachate expected to be generated to determine possible effects on the liner materials prior to installation.

~~8.44.2.a.4.iii~~ 8.11.2.a.1.B. Placed upon a foundation or base capable of providing support to the liners and resistance to pressure gradients above and below the liners to prevent failure of the liners due to settlement, compression, or uplift;

~~8.44.2.a.4.iii~~ 8.11.2.a.1.C. Installed to cover all surrounding earth likely to be in contact with the waste and leachate;

~~8.44.2.a.4.iv~~ 8.11.2.a.1.D. Constructed to be free of lenses, cracks, channels, holes, or other structural nonuniformities; and

~~8.44.2.a.4.v~~ 8.11.2.a.1.E. If a soil-based or admixed liner is to be used as the secondary liner (i.e., the liner underneath the primary liner), then such liner must be at least 90 cm (3 feet) thick with a maximum saturated hydraulic conductivity of no more than 1×10^{-7} cm/sec throughout the total thickness and area of the liner;

8.11.2.a.2. A leachate collection and removal system immediately above the primary liner that is designed, constructed, maintained, and operated to collect and remove leachate from the landfill. The chief will specify conditions for design and operation 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:

~~8.44.2.a.2.i~~ 8.11.2.a.2.A. Constructed of materials that are:

~~8.44.2.a.2.i.A~~ 8.11.2.a.2.A.i. Chemically resistant to the waste managed in the landfill and the leachate expected to be generated; and

~~8.44.2.a.2.i.B~~ 8.11.2.a.2.A.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

~~8.44.2.a.2.iii~~ 8.11.2.a.2.B. Must be overlain by a graded granular material assuring a hydraulic conductivity of 1×10^{-3} cm/sec placed with a minimum slope of two percent (2%).

~~8.44.2.a.2.iii~~ 8.11.2.a.2.C. Designed and operated to function without clogging through the operating life and scheduled closure and post closure period of the landfill.

8.11.2.a.3. A leachate detection system must be designed, constructed, maintained and operated between the liners to detect any migration of liquid into the space between the liners.

8.11.2.b. 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, 24-hour storm.

8.11.2.c. The owner or operator must design, construct, operate, and maintain a runoff management system to collect and control at least the water volume resulting from a 25-year, 24-hour storm.

8.11.2.d. Collection and holding facilities (e.g., tanks or basins) associated with run-on and runoff control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

8.11.2.e. 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.

8.11.2.f. The landfill (including the base of the lower most liner components) must be located at a minimum of three (3) feet above the highest known seasonal water table elevation. This three-foot distance may be achieved by elevating the waste disposal facility artificially or by non-mechanical lowering of the water table. All plans for alteration of the water level must be approved by the chief and will become a part of the hazardous waste management permit.

8.11.2.g. The chief will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section Section 8.11.2 of these regulations are satisfied.

8.11.2.h. The design specifications, construction, and installation practices and operating conditions will be certified by an owner or operator and a registered professional engineer.

8.11.2.i. Existing portions of landfills are exempt from the requirements of Section 8.11.2.a, 8.11.3.a, 8.11.4, 8.11.11.c.2, 8.11.11.c.3, and 8.11.11.d of these regulations, provided that Section 8.11.2.i.1 of these regulations is complied with.

8.11.2.i.1. The owner or operator, in order to qualify for the exemption in Section 8.11.2.i.1 of these regulations, must demonstrate that statistically significant increases of hazardous constituents do not occur in the groundwater or surface water during its active life and the post closure period, except as provided in Section 8.11.2.j of these regulations.

8.11.2.i.2. If statistically significant increases of hazardous constituents are detected as outlined in Section 8.13.8.d of these regulations in the groundwater beneath the facility (including the regulated unit) the owner or operator must comply with the corrective action outlined in Section 8.13.9 of these regulations if groundwater contamination has been determined.

8.11.2.j. If the owner or operator determines that the corrective action program being implemented under Section 8.13.9 of these regulations is insufficient for causing cessation of hazardous waste constituents migration, then the unit must be closed. However, if it is determined that the corrective action will adequately arrest and remove the contamination, the owner may choose one of the four options which will become part of the conditions of the permit:

8.11.2.j.1. Retrofit the unit with liners in accordance with Section 8.11.1.a.1 of these regulations;

8.11.2.j.2. Stop the leak;

8.11.2.j.3. Continue the operation of the unit, while concurrently developing/implementing an alternate treatment, storage, or disposal method, for a period of five (5) years, at which time the unit must be closed; or

8.11.2.j.4. Continue the operation of the unit provided a demonstration can be made and approved by the chief that no adverse impact to human health or to the environment will result from the continued operation of the unit during the active life, closure, and post-closure period, provided that the facility continue to comply with an approved corrective action program. Such demonstration must include and discuss the following:

~~8.11.2.j.4.i.~~ 8.11.2.j.4.A. Potential adverse effects on groundwater quality, considering:

~~8.11.2.j.4.i.A.~~ 8.11.2.j.4.A.i. The physical and chemical characteristics of the waste in the regulated unit, including its potential for migration;

~~8.11.2.j.4.i.B.~~ 8.11.2.j.4.A.ii. The hydrogeological characteristics of the facility and surrounding land;

~~8.11.2.j.4.i.C.~~ 8.11.2.j.4.A.iii. The quantity of groundwater and the direction of groundwater flow;

~~8.11.2.j.4.i.D.~~ 8.11.2.j.4.A.iv. The proximity and withdrawal rates of groundwater users;

~~8.11.2.j.4.i.E.~~ 8.11.2.j.4.A.v. The current and future uses of groundwater in the area;

~~8.11.2.j.4.i.F.~~ 8.11.2.j.4.A.vi. The existing quality of groundwater, including other sources of contamination and their cumulative impact on groundwater quality;

~~8.11.2.j.4.i.G.~~ 8.11.2.j.4.A.vii. The potential for health risks caused by human exposure to waste constituents;

~~8.11.2.j.4.i.H.~~ 8.11.2.j.4.A.viii. The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

~~8.11.2.j.4.i.I.~~ 8.11.2.j.4.A.ix. The persistence and permanence of the potential adverse effects; and

~~8.11.2.j.4.ii.~~ 8.11.2.j.4.B. Potential adverse effects on hydraulically connected surface water quality, considering:

~~8.11.2.j.4.ii.A.~~ 8.11.2.j.4.B.i. The volume and physical and chemical characteristics of the waste in the regulated unit;

~~8.44.2.j.4.ii.B.~~ 8.11.2.j.4.B.ii. The hydrogeological characteristics of the facility and surrounding land;

~~8.44.2.j.4.ii.C.~~ 8.11.2.j.4.B.iii. The quantity and quality of groundwater and the direction of groundwater flow;

~~8.44.2.j.4.ii.D.~~ 8.11.2.j.4.B.iv. The patterns of rainfall in the region;

~~8.44.2.j.4.ii.E.~~ 8.11.2.j.4.B.v. The proximity of the regulated unit to surface waters;

~~8.44.2.j.4.ii.F.~~ 8.11.2.j.4.B.vi. The current and future uses of surface waters in the area and any water quality standards established for those surface waters;

~~8.44.2.j.4.ii.G.~~ 8.11.2.j.4.B.vii. The existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality;

~~8.44.2.j.4.ii.H.~~ 8.11.2.j.4.B.viii. The potential for health risks caused by human exposure to waste constituents;

~~8.44.2.j.4.ii.I.~~ 8.11.2.j.4.B.ix. The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

~~8.44.2.j.4.ii.J.~~ 8.11.2.j.4.B.x. The persistence and permanence of the potential adverse effects.

~~8.44.2.j.4.iii.~~ 8.11.2.j.4.C. In making any determination under Section 8.11.2.j.4 of these regulations concerning the use of groundwater in the area around the facility, the chief will consider any identification of underground sources of drinking water and exempted aquifers made under the West Virginia Administrative Regulations, Water Resources Board, ~~Series-IX-(1983)~~ Series 9.

8.11.3. Monitoring, Testing, and Inspection.

8.11.3.a. During and immediately after construction or installation, liners and cover systems must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, and foreign materials).

8.11.3.a.1. Synthetic liners and covers (e.g., membranes, sheets, or coatings) must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters.

8.11.3.a.2. Soil-based and admixed liners and covers must be tested for compaction density, moisture content, and permeability and inspected for imperfections including lenses, cracks, channels, root holes, animal borings, or other structural nonuniformities that may cause an increase in the permeability of the liner or cover.

8.11.3.a.3. Upon discovery of any imperfections, damage, or nonuniformities, the repair of the liner must be completed prior to placement of the wastes into the landfill.

8.11.3.a.4. Any repair to the liner must be certified by a registered professional engineer.

8.11.3.b. While a landfill is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

8.11.3.b.1. Deterioration, malfunctions, or improper operation of run-on and runoff control systems;

8.11.3.b.2. The presence of liquids in leak detection systems which were installed to comply with Section 8.11.2 of these regulations;

8.11.3.b.3. Proper functioning of wind dispersal control systems, where present; and

8.11.3.b.4. The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

8.11.3.c. If liquid leaks into the leachate detection system, the owner or operator must:

8.11.3.c.1. Immediately notify the chief through the Division of Water Resources' Emergency Notification Number 1-800-642-3074 and follow with written notification within seven (7) days of detecting the leak.

8.11.3.c.2. Within fifteen (15) days after detecting leak, submit to the chief a written report of the problem and corrective measures taken.

8.11.3.c.3. Within a period of time specified in the permit, remove accumulated liquid, repair or replace the liner which is leaking to prevent the migration of liquids through the liner, and obtain a certification from a registered professional engineer that, to the best of his knowledge and opinion, the leak has been stopped.

8.11.3.c.4. File a report including all technical drawings and information detailing the repair or liner replacement work accomplished immediately after repairs are completed.

8.11.3.d. The chief will specify in the permit all conditions for design and operation that are necessary to ensure that the requirements of ~~this section~~ Section 8.11.3 of these regulations are satisfied.

8.11.4. Liner System Repairs; Contingency Plans.

8.11.4.a. Whenever there is any indication of a possible failure of the liner system, that system must be inspected in accordance with the provisions of that system's evaluation and repair plan required by Section 8.11.4.d of these regulations. Indications of possible failure of the liner system include at least liquid detected in the leachate detection system, apparent or potential deterioration of the liner(s) based on observation or test samples of the liner materials, any mishandling of wastes placed in the landfill, and foreign objects in the landfill.

8.11.4.b. Whenever there is a positive indication of a failure of the liner system, the landfill must be removed from service. Indications

of positive failure of the liner system include waste detected in the leachate detection system or a breach (e.g., a hole, tear, crack, or separation) in the liner system.

8.11.4.c. If the landfill must be removed from service as required by Section 8.11.4.b of these regulations, the owner or operator must:

8.11.4.c.1. Immediately stop the addition of wastes into the landfill.

8.11.4.c.2. Immediately contain any leakage which has occurred or is occurring.

8.11.4.c.3. Immediately cause the leak to be stopped.

8.11.4.c.4. If the leak cannot be stopped by any other means, remove the waste from the landfill.

8.11.4.c.5. Immediately notify the chief through the Division of Water Resources' Emergency Notification Number 1-800-642-3074.

8.11.4.c.6. Within fifteen (15) days after detecting leak, submit to the chief a written report of the problem and corrective measures taken.

8.11.4.d. As part of the contingency plan required in Section 8.4 of these regulations, the owner or operator must specify:

8.11.4.d.1. A procedure for complying with the requirements of Section 8.11.4.c of these regulations; and

8.11.4.d.2. A liner system evaluation and repair plan describing testing and monitoring techniques; procedures to be followed to evaluate the integrity of the liner system in the event of a possible failure; a schedule of actions to be taken in the event of a possible failure; and a description of the repair techniques to be used in the event of leakage due to liner system failure or deterioration which does not require the landfill to be removed from service.

8.11.4.e. No landfill that has been removed from service in accordance with Section 8.11.4.b of these regulations may be restored to service unless:

8.11.4.e.1. The liner system has been repaired; and

8.11.4.e.2. The liner system has been re-certified by a registered professional engineer as meeting the design specifications approved in the permit.

8.11.4.f. A landfill that has been removed from service in accordance with Section 8.11.4.b of these regulations and that is not being repaired must be closed in accordance with Section 8.11.11 of these regulations.

8.11.4.g. All wastes removed from the landfill must be managed as a hazardous waste in compliance with all applicable requirements. Any point source discharge to waters of the State is subject to the requirements of the State Water Pollution Control Act and all

regulations promulgated thereunder.

8.11.5. (Reserved).

8.11.6. (Reserved).

8.11.7. (Reserved).

8.11.8. (Reserved).

8.11.9. (Reserved).

8.11.10. Surveying and Record Keeping.

The owner or operator of a landfill must maintain the following items in the operating record required under Section 8.5.4 of these regulations:

8.11.10.a. On a map, the exact location and dimensions, including depth of each cell with respect to permanently surveyed reference points established from USGS or USCG benchmarks; and

8.11.10.b. The contents by hazardous waste type and quantity of each cell and the approximate location and quantity of each hazardous waste type within each cell.

8.11.11. Closure and Post-Closure.

8.11.11.a. 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:

8.11.11.a.1. Provide long-term minimization of migration of liquids through the closed landfill;

8.11.11.a.2. Function with minimum maintenance;

8.11.11.a.3. Promote drainage and minimize erosion or abrasion of the cover;

8.11.11.a.4. Accommodate settling and subsidence so that the cover's integrity is maintained; and

8.11.11.a.5. Have a permeability less than or equal to the least permeable component of the liner system or 1×10^{-7} cm/sec whichever value is less.

8.11.11.b. During construction or installation, cover systems must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign materials).

8.11.11.b.1. Synthetic covers (e.g., membranes, sheets, or coatings) must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters.

8.11.11.b.2. Soil-based and admixed covers must be tested for compaction density, moisture content, and permeability and inspected

for imperfections including lenses, cracks, channels, root holes, animal borings, or other structural nonuniformities that may cause an increase in the permeability of the cover.

8.11.11.b.3. Upon discovery of any imperfections, damage, or nonuniformities, the repair of the cover must be completed before final closure is authorized.

8.11.11.b.4. Any repair to the cover system must be certified by an independent registered professional engineer.

8.11.11.c. After final closure, the owner or operator must comply with all post-closure requirements contained in Sections 8.6.7, 8.6.8, and 13 of these regulations including maintenance and monitoring throughout the post closure period (specified in the permit under Section 8.6.7 of these regulations). The owner or operator must:

8.11.11.c.1. Maintain the integrity and effectiveness of the final cover, including making repairs to the cover as necessary to correct the effect of settling, subsidence, erosion, or other events. Any repair to the cover system must be certified by a registered professional engineer as meeting the design specifications approved in the permit;

8.11.11.c.2. Maintain and monitor the leachate detection system in accordance with Section 8.11.3 of these regulations where such a system is present between double liner systems;

8.11.11.c.3. Continue to operate the leachate collection and removal system for the entire post-closure period and until leachate is no longer detected;

8.11.11.c.4. Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of Section 8.13 of these regulations;

8.11.11.c.5. Prevent run-on and runoff from eroding or otherwise damaging the final cover; and

8.11.11.c.6. Protect and maintain surveyed benchmarks or reference points used in complying with Section 8.11.10 of these regulations.

8.11.11.d. During the post-closure period, if liquid leaks into a leachate detection system installed under Section 8.11.2 of these regulations, the owner or operator must:

8.11.11.d.1. Immediately notify the chief through the Division of Water Resources' Emergency Notification Number 1-800-642-3074 followed with written notification within seven (7) days of detecting the leak.

8.11.11.d.2. Within fifteen (15) days after detecting the leak, submit to the chief a written report of the problem and corrective measures taken.

8.11.11.d.3. Begin remedial actions set forth in the contingency plan specified in the permit which shall at least include removing the accumulated liquid and begin corrective action to stop any leak and

minimize the potential of possible groundwater contamination by some means within the time period prescribed.

8.11.11.d.4. Manage as hazardous waste in accordance with all regulations governing the generation of such waste, the liquid removed from the detection system unless the owner or operator can demonstrate otherwise.

8.11.11.d.5. Obtain a certification from a registered professional engineer that to the best of his knowledge and opinion, the leak has been stopped and that all necessary work and repairs has been completed to prevent or minimize any potential for groundwater contamination.

8.11.12. (Reserved).

8.11.13. Special Requirements for Ignitable or Reactive Waste.

8.11.13.a. Except as provided in Section 8.11.13.b of these regulations, and in Section 8.11.17, ignitable or reactive waste must not be placed in a landfill unless the waste is treated, rendered, or mixed before or immediately after placement in a landfill so that:

8.11.13.a.1. The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under Section 3.3.2 or Section 3.3.4 of these regulations; and

8.11.13.a.2. Section 8.2.8.b of these regulations is complied with.

8.11.13.b. Non-liquid ignitable wastes in containers may be landfilled without meeting the requirements of Section 8.11.13.a of these regulations, 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 after placement with soil or other noncombustible 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.

8.11.14. Special Requirements for Incompatible Wastes.

Incompatible wastes, or incompatible wastes and other materials, (see Appendix X of these regulations for examples) must not be placed in the same landfill cell, unless Section 8.2.8.b of these regulations is complied with.

8.11.15. Restrictions on Liquid Waste.

8.11.15.a. Bulk or noncontainerized liquid waste or waste containing free liquids must not be placed in a landfill unless:

8.11.15.a.1. The landfill has a liner and leachate collection and removal system that meet the requirements of Section 8.11.2 of these regulations; or

8.11.15.a.2. Before disposal the liquid waste or waste containing free liquids is treated, solidified and stabilized -- chemically or physically -- so that free liquids are no longer present.

8.11.15.b. Containers holding free liquids must not be placed in a landfill unless:

8.11.15.b.1. The container is very small, such as an ampule; and

8.11.15.b.2. The container is placed in an overpack drum (lab pack) as defined in Section 8.11.17 of these regulations and is disposed of in accordance with Section 8.11.17 of these regulations.

8.11.16. Special Requirements for Containers.

Containers must be either:

8.11.16.a. At least ninety percent (90%) full when placed in the landfill; or

8.11.16.b. Crushed, shredded, or similarly reduced in volume to the maximum practical extent before burial in the landfill.

8.11.17. Disposal of Small Containers of Hazardous Waste in Over-Packed Drums (Lab Packs).

Small containers of hazardous waste may be placed in a landfill if the following requirements are met:

8.11.17.a. Hazardous waste must be packaged in non-leaking containers. The inside containers must be of a design and constructed of a material that will not react dangerously or otherwise with, be decomposed by, or be ignited by the contained waste. The 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) DOT hazardous materials regulations (49 C.F.R. Parts 173, 178, and 179), if those regulations specify a particular inside container for the waste.

8.11.17.b. The inside containers must be packed in an open head DOT specification metal shipping container (49 C.F.R. Parts 178 and 179) of no more than 416 liter (110 gallon) capacity and surrounded by, at a minimum, a sufficient quantity of absorbent material to completely absorb all of the liquid contents of the inside containers. The metal outer container must be full after packing with inside containers and absorbent material.

8.11.17.c. The absorbent material used must not be capable of reacting dangerously or otherwise with, being decomposed by, or being ignited by the contents of the inside containers in accordance with Section 8.2.2.5 of these regulations.

8.11.17.d. Incompatible wastes, as defined in Section 2 of these regulations, must not be placed in the same outside container.

8.11.17.e Reactive wastes, other than cyanide or sulfide bearing wastes as defined in Section 3.3.4.a.5 of these regulations must be treated or

rendered nonreactive prior to packaging in accordance with Sections 8.11.17.a through 8.11.17.d of these regulations. Cyanide and sulfide bearing reactive waste may be packed in accordance with Sections 8.11.17.a through 8.11.17.d of these regulations without first being treated or rendered nonreactive.

8.11.18. Addition of New Wastes.

Prior to approval of a permit modification for the addition of wastes not already authorized in the permit, the waste must be tested to determine its compatibility with the waste(s) already present and with the liner materials to determine if it will have any detrimental effects (e.g., causes cracks, dissolution, decreased mechanical strength, or increased permeability).

8.11.19. (Reserved).

8.11.20. (Reserved).

8.11.21. (Reserved).

8.11.22. (Reserved).

8.11.23. (Reserved).

8.11.24. (Reserved).

8.11.25. (Reserved).

8.11.26. (Reserved).

8.11.27. (Reserved).

8.11.28. (Reserved).

8.11.29. (Reserved).

8.11.30. (Reserved).

8.11.31. (Reserved).

8.11.32. (Reserved).

8.11.33. (Reserved).

8.11.34. (Reserved).

8.11.35. (Reserved).

8.11.36. (Reserved).

8.11.37. (Reserved).

8.11.38. (Reserved).

8.11.39. (Reserved).

8.11.40. (Reserved).

8.12. Land Treatment.

8.12.1. Applicability.

The regulations in ~~this section~~ Section 8.12 of these regulations apply to owners and operators of facilities that treat or dispose of hazardous waste in land treatment units, except as Section 8.1 of these regulations provides otherwise.

8.12.2. Treatment Program.

8.12.2.a. An owner or operator subject to Section 8.12 of these regulations 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 chief will specify in the facility permit the elements of the treatment program, including:

8.12.2.a.1. The wastes that are capable of being treated at the unit based on a demonstration under Section 8.12.3 of these regulations;

8.12.2.a.2. Design measures and operating practices necessary to maximize the success of degradation, transformation, and immobilization processes in the treatment zone in accordance with Section 8.12.4.a of these regulations; and

8.12.2.a.3. Unsaturated zone monitoring provisions meeting the requirements of Section 8.12.9 of these regulations.

8.12.2.b. The chief will specify in the facility permit the hazardous constituents that must be degraded, transformed, or immobilized under ~~this section~~ Section 8.12 of these regulations. Hazardous constituents are constituents identified in Appendix VIII of these regulations that are reasonably expected to be in, or derived from waste placed in or on the treatment zone.

8.12.2.c. The chief 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:

8.12.2.c.1. No more than 1.5 meters (5 feet) from the initial soil surface; and

8.12.2.c.2. More than 1.5 meters (5 feet) above the seasonal high water table.

8.12.3. Treatment Demonstration.

8.12.3.a. 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.

8.12.3.b. 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 Section 8.12.3.a of these regulations, he must obtain a treatment or disposal permit under Section 11 of these regulations. The chief 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 Section 8.12.3.c of these regulations.

8.12.3.c. Any field test or laboratory analysis conducted in Section 8.12.3.b of these regulations order to make a demonstration under Section 8.12.3.a of these regulations must:

8.12.3.c.1. Accurately simulate the characteristics and operating conditions for the proposed land treatment unit including:

~~8.12.3.e.4.i.~~ 8.12.3.c.1.A. The characteristics of the waste (including the presence of Appendix VIII constituents);

~~8.12.3.e.4.ii.~~ 8.12.3.c.1.B. The climate in the area;

~~8.12.3.e.4.iii.~~ 8.12.3.c.1.C. The topography of the surrounding area;

~~8.12.3.e.4.iv.~~ 8.12.3.c.1.D. The characteristics of the soil in the treatment zone (including depth); and

~~8.12.3.e.4.v.~~ 8.12.3.c.1.E. The operating practices to be used at the unit.

8.12.3.c.2. 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

8.12.3.c.3. Be conducted in a manner that protects human health and the environment considering:

~~8.12.3.e.3.i.~~ 8.12.3.c.3.A. The characteristics of the waste to be tested;

~~8.12.3.e.3.ii.~~ 8.12.3.c.3.B. The operating and monitoring measures taken during the course of the test;

~~8.12.3.e.3.iii.~~ 8.12.3.c.3.C. The duration of the test;

~~8.12.3.e.3.iv.~~ 8.12.3.c.3.D. The volume of waste used in the test; and

~~8.12.3.e.v.~~ 8.12.3.c.E. In the case of field tests, the potential for migration of hazardous constituents to groundwater or surface water.

8.12.4. Design and Operating Requirements.

The chief 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 section~~ Section 8.12 of these regulations.

8.12.4.a. The owner and 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 Section 8.12.2 of these regulations. At a minimum, the chief will specify the following in the facility permit:

8.12.4.a.1. The rate and method of waste application to the treatment zone;

8.12.4.a.2. Measures to control soil pH;

8.12.4.a.3. Measures to enhance microbial or chemical reactions (e.g., fertilization or tilling); and

8.12.4.a.4. Measures to control the moisture content of the treatment zone.

8.12.4.b. The owner or operator must design, construct, operate, and maintain the treatment zone to minimize runoff of hazardous constituents during the active life of the land treatment unit.

8.12.4.c. 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 ~~24-hour, 25-year~~ 25-year, 24-hour storm.

8.12.4.d. The owner or operator must design, construct, operate, and maintain a runoff management system to collect and control at least the water volume resulting from a ~~24-hour, 25-year~~ 25-year, 24-hour storm.

8.12.4.e. Collection and holding facilities (e.g., tanks or basins) associated with run-on and runoff control systems must be emptied or otherwise managed expeditiously after storms to maintain the design capacity of the system.

8.12.4.f. 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.

8.12.4.g. The owner or operator must manage the unit to control the wind dispersal of aerosols or vapors during waste application.

8.12.4.h. The owner or operator must inspect the unit weekly and after any precipitation event to detect evidence of:

8.12.4.h.1. Deterioration, malfunctions, or improper operation of run-on and runoff control systems; and

8.12.4.h.2. Improper functioning of wind dispersal control measures.

8.12.5. (Reserved).

8.12.6. (Reserved).

8.12.7. Food Chain Crops.

The chief 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-section~~ Section 8.12 of these regulations. The chief will specify in the facility permit the specific food chain crops which may be grown.

8.12.7.a.1. 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:

~~8.12.7.a.1.i.~~ 8.12.7.a.1.A. 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

~~8.12.7.a.1.ii.~~ 8.12.7.a.1.B. Will not occur in greater concentrations in or on the food or feed portions of crops grown on the treatment zone than in or identical portions of the same crops grown on untreated soils under similar conditions in the same region.

8.12.7.a.2. The owner or operator must make the demonstration required under ~~this-paragraph~~ Section 8.12.7 of these regulations prior to the planting of crops at the facility for all constituents identified in Appendix VIII of these regulations that are reasonably expected to be in, or derived from, waste placed in or on the treatment zone.

8.12.7.a.3. In making a demonstration under ~~this-paragraph~~ Section 8.12.7 of these regulations, the owner, or operator may use field tests, greenhouse studies, available data, or, in the case of existing units, operating data, and must;

~~8.12.7.a.3.i.~~ 8.12.7.a.3.A. Base the demonstration on conditions similar to those present in the treatment zone, including soil characteristics (e.g., pH or cation exchange capacity), specific wastes, application rates, application methods, and crops to be grown; and

~~8.12.7.a.3.ii.~~ 8.12.7.a.3.B. Describe the procedures used in conducting any tests, including the sample selection criteria, sample size, analytical methods, and statistical procedures.

8.12.7.a.4. If the owner or operator intends to conduct field tests or greenhouse studies in order to make the demonstration required under ~~this-paragraph~~ Section 8.12.7 of these regulations, he must obtain a permit for conducting such activities.

8.12.7.b. The owner or operator must comply with the following conditions if cadmium is contained in wastes applied to the treatment zone:

~~8.12.7.b.1.i.~~ 8.12.7.b.1.A. 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;

~~8.12.7.b.1.iii.~~ 8.12.7.b.1.B. The annual application from cadmium from waste must not exceed 0.44 lbs/acre 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 lbs/acre
Present to June 30, 1984	1.78
July 1, 1984 to December 31, 1986	1.11
Beginning January 1, 1987	0.44

~~8.12.7.b.1.iii.~~ 8.12.7.b.1.C. The cumulative application of cadmium from waste must not exceed 4.46 lbs/acre if the waste and soil mixture has a pH of less than 6.5; and

~~8.12.7.b.1.iv.~~ 8.12.7.b.1.D. 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: 4.46 lbs/acre if soil cation exchange capacity (CEC) is less than 5 meq/100g; 8.92 lbs/acre if soil CEC is 5-15 meq/100g; and 17.84 lbs/acre if soil CEC is greater than 15 meq/100g; or

~~8.12.7.b.2.i.~~ 8.12.7.b.2.A. Animal feed must be the only food chain crop produced;

~~8.12.7.b.2.ii.~~ 8.12.7.b.2.B. 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;

~~8.12.7.b.2.iii.~~ 8.12.7.b.2.C. 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

~~8.12.7.b.2.iv.~~ 8.12.7.b.2.D. 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 Section 8.12.7.b.2 of these regulations.

8.12.8. (Reserved).

8.12.9. Unsaturated Zone Monitoring.

An owner or operator subject to ~~Section 8.12.9~~ Section 8.12 of these

regulations must establish an unsaturated zone monitoring program to discharge the following responsibilities:

8.12.9.a. The owner or operator must monitor the soil and soil-pore liquid to determine whether hazardous constituents migrate out of the treatment zone.

8.12.9.a.1. The chief will specify the hazardous constituents to be monitored in the facility permit. The hazardous constituents to be monitored are those specified under Section 8.12.2 of these regulations.

8.12.9.a.2. The chief may require monitoring for principal hazardous constituents (PHCs) in lieu of the constituents specified under Section 8.12.2.b of these regulations. 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 chief 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 to at least equivalent levels for the other hazardous constituents in the wastes.

8.12.9.b. 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:

8.12.9.b.1. 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

8.12.9.b.2. Indicate the quality of soil pore liquid and the chemical make-up of the soil below the treatment zone.

8.12.9.c. The owner or operator must establish a background value for each hazardous constituent to be monitored under Section 8.12.9.a of these regulations. The permit will specify the background values for each constituent or specify the procedures to be used to calculate the background values.

8.12.9.c.1. The background soil values may be based on a one-time sampling at a background plot having characteristics similar to those of the treatment zone.

8.12.9.c.2. 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.

8.12.9.c.3. The owner or operator must express all background values in a form necessary for the determination of statistically significant increases under Section 8.12.9.f of these regulations.

8.12.9.c.4. 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 Section 8.12.9.b.1 of these regulations.

8.12.9.d. The owner or operator must conduct soil monitoring and soil-pore liquid monitoring immediately below the treatment zone. The chief 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 Section 8.12.9.f of these regulations.

8.12.9.e. 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:

8.12.9.e.1. Sample collection;

8.12.9.e.2. Sample preservation and shipment;

8.12.9.e.3. Analytical procedures; and

8.12.9.e.4. Chain of custody control.

8.12.9.f. The owner or operator must determine whether there is a statistically significant change over background values for any hazardous constituent to be monitored under Section 8.12.9.a of these regulations below the treatment zone each time he conducts soil monitoring and soil-pore liquid monitoring under Section 8.12.9.d of these regulations.

8.12.9.f.1. In determining whether a statistically significant increase has occurred, the owner or operator must compare the value of each constituent, as determined under Section 8.12.9.d of these regulations, to the background value for that constituent according to the statistical procedure specified in the facility permit under this paragraph Section 8.12.9 of these regulations.

8.12.9.f.2. 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 chief will specify that the 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.

8.12.9.f.3. 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 chief will specify a statistical procedure in the facility permit that he finds:

~~8.12.9.f.3.A.~~ 8.12.9.f.3.A. Is appropriate for the distribution of the data used to establish background values; and

~~8.12.9.f.3.A.~~ 8.12.9.f.3.B. 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.

8.12.9.g. If the owner or operator determines, pursuant to Section 8.12.9.f of these regulations, that there is a statistically significant increase of hazardous constituents below the treatment zone, he must:

8.12.9.g.1. Notify the chief of this finding in writing within seven (7) days. The notification must indicate what constituents have shown statistically significant increases.

8.12.9.g.2. Within forty-five (45) days, submit to the chief 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.

8.12.9.h. If the owner or operator determines, pursuant to Section 8.12.9.f of these regulations, that there is a statistically significant increase of hazardous constituents below the treatment zone, he may demonstrate that the increase resulted from an error in sampling, analysis, or evaluation. While the owner or operator may make a demonstration under ~~this--paragraph~~ Section 8.12.9 of these regulations in addition to, or in lieu of, submitting a permit modification application under Section 8.12.9.g.2 of these regulations, he is not relieved of the requirement to submit a permit modification application within the time specified in Section 8.12.9.g.2 of these regulations unless the demonstration made ~~under this-paragraph~~ Section 8.12.9 of these regulations successfully shows that the increase resulted from an error in sampling, analysis, or evaluation. In making a demonstration under ~~this--paragraph~~ Section 8.12.9 of these regulations, the owner or operator must:

8.12.9.h.1. Notify the chief in writing within seven (7) days of determining a statistically significant increase below the treatment zone that he intends to make a determination under ~~this--paragraph~~ Section 8.12.9 of these regulations;

8.12.9.h.2. Within forty-five (45) days, submit a report to the chief demonstrating that the increase resulted from error in sampling, analysis, or evaluation;

8.12.9.h.3. Within forty-five (45) days, submit to the chief an application for a permit modification to make any appropriate changes to the unsaturated zone monitoring program at the facility; and

8.12.9.h.4. Continue to monitor in accord with the unsaturated zone monitoring program established under ~~this-section~~ Section 8.12 of these regulations.

8.12.10. Record Keeping.

The owner or operator must include hazardous waste application dates and rates in the operating record required under Section 8.5.4 of these regulations.

8.12.11. Closure and Post-Closure Care.

8.12.11.a. During the closure period the owner or operator must:

8.12.11.a.1. Continue all operations (including pH control) necessary to maximize degradation, transformation, or immobilization of hazardous constituents within the treatment zone as required under Section 8.12.4.a of these regulations, except to the extent such measure are inconsistent with Section 8.12.11.a.8 of these regulations;

8.12.11.a.2. Continue all operations in the treatment zone to minimize runoff of hazardous constituents as required under Section 8.12.4.b of these regulations;

8.12.11.a.3. Maintain the run-on control system required under Section 8.12.4.c of these regulations;

8.12.11.a.4. Maintain the runoff management system required under Section 8.12.4.d of these regulations;

8.12.11.a.5. Control wind dispersal of hazardous waste if required under Section 8.12.4.f of these regulations;

8.12.11.a.6. Continue to comply with any prohibitions or conditions concerning growth of food chain crops under Section 8.12.7 of these regulations;

8.12.11.a.7. Continue unsaturated zone monitoring in compliance with Section 8.12.9 of these regulations, except that soil-pore liquid monitoring may be terminated ninety (90) days after the last application of waste to the treatment zone; and

8.12.11.a.8. 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.

8.12.11.b. For the purpose of complying with Section 8.6.6 of these regulations, when closure is completed the owner or operator may submit to the chief certification by an independent qualified soil scientist, in lieu of an independent registered professional engineer, that the facility has been closed in accordance with the specifications in the approved closure plan.

8.12.11.c. During the post-closure care period the owner or operator must:

8.12.11.c.1. 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;

8.12.11.c.2. Maintain a vegetative cover over closed portions of the facility;

8.12.11.c.3. Maintain the run-on control system required under Section

8.12.4.c of these regulations;

8.12.11.c.4. Maintain the runoff management system required under Section 8.12.4.d of these regulations;

8.12.11.c.5. Control wind dispersal of hazardous waste if required under Section 8.12.4.f of these regulations;

8.12.11.c.6. Continue to comply with any prohibitions or conditions concerning growth of food chain crops under Section 8.12.7 of these regulations; and

8.12.11.c.7. Continue unsaturated zone monitoring in compliance with Section 8.12.9 of these regulations except that soil-pore liquid monitoring may be terminated ninety (90) days after the last application of waste to the treatment zone.

8.12.11.d. The owner or operator is not subject to regulation under Section 8.12.11.a.8 and 8.12.11.c of these regulations if the chief 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 Section 8.12.11.d.3 of these regulations. The owner or operator may submit such a demonstration to the chief or at any time during the closure or post-closure care periods. For the purposes of this paragraph Section 8.12.11 of these regulations:

8.12.11.d.1. 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 Section 8.12.2.b of these regulations.

~~8.12.11.d.1.1.~~ 8.12.11.d.1.A. Background soil values may be based on a one-time sampling of a background plot having characteristics similar to those of the treatment zone.

~~8.12.11.d.1.2.~~ 8.12.11.d.3.B. 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 Section 8.12.11.d.3 of these regulations.

8.12.11.d.2. 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.

8.12.11.d.3. 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:

~~8.12.11.d.3.4.~~ 8.12.11.d.3.A. Is appropriate for the distribution of the data used to establish background values; and

~~8.12.11.d.3.5.~~ 8.12.11.d.3.B. 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.

8.12.11.e. The owner or operator is not subject to regulation under Section 8.13 of these regulations if the chief finds that the owner or operator satisfies Section 8.12.11.d of these regulations and if unsaturated zone monitoring under Section 8.12.9 of these regulations indicates that hazardous constituents have not migrated beyond the treatment zone during the active life of the land treatment unit.

8.12.12. Special Requirements for Ignitable or Reactive Waste.

The owner or operator must not apply ignitable or reactive waste to the treatment zone unless:

8.12.12.a. The waste is immediately incorporated into the soil so that:

8.12.12.a.1. The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under Section 3.3.2 or Section 3.3.4 of these regulations; and

8.12.12.a.2. Section 8.2.8.b of these regulations is complied with, or

8.12.12.b. 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.

8.12.13. Special Requirements for Incompatible Wastes.

The owner or operator must not place incompatible wastes, or incompatible wastes and other materials (see Appendix X for examples), in or on the same treatment zone, unless Section 8.2.8.b of these regulations is complied with.

8.12.14. (Reserved).

8.12.15. (Reserved).

8.12.16. (Reserved).

8.12.17. (Reserved).

8.12.18. (Reserved).

8.12.19. (Reserved).

8.12.20. (Reserved).

8.12.21. (Reserved).

8.12.22. (Reserved).

8.12.23. (Reserved).

8.12.24. (Reserved).

8.12.25. (Reserved).

8.12.26. (Reserved).

8.12.27. (Reserved).

8.12.28. (Reserved).

8.12.29. (Reserved).

8.12.30. (Reserved).

8.13. Groundwater Protection.

8.13.1. Applicability.

8.13.1.a. Except as provided in Section 8.13.1.b of these regulations, the regulations in Section 8.13 of these regulations apply to owners and operators of facilities that treat, store, or dispose of hazardous waste in surface impoundments, waste piles, land treatment units, or landfills. The owner or operator must satisfy the requirements of Section 8.13 of these regulations for all wastes (or constituents thereof) contained in any such waste management unit at the facility that receives hazardous waste after the effective date of Section 8.13 of these regulations (hereinafter referred to as a "regulated unit"). Any waste or waste constituent migrating beyond the waste management area under Section 8.13.5.b of these regulations is assumed to originate from a regulated unit unless the chief finds that such waste or waste constituent originated from another source.

8.13.1.b. The owner or operator is not subject to regulation under Section 8.13 of these regulations if:

8.13.1.b.1. He is exempted under Section 8.1 of these regulations;

8.13.1.b.2. He designs and operates a pile in compliance with Section 8.10.1.c of these regulations;

8.13.1.b.3. The chief finds, pursuant to Section 8.12.11.d of these regulations, that the treatment zone of a land treatment unit does not contain concentrations 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 Section 8.12.9 of these regulations 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 paragraph~~ Section 8.13.1 of these regulations can only relieve an owner or operator of responsibility to meet the requirements of Section 8.13 of these regulations during the post closure care period.

8.13.1.c. The regulations under Section 8.13 of these regulations apply during the active life of the regulated unit (including the closure period). After closure of the regulated unit, the regulations in Section 8.13 of these regulations:

8.13.1.c.1. Do not apply if all waste, waste residues, contaminated containment system components, and contaminated subsoils are removed or decontaminated at closure;

8.13.1.c.2. Apply during the post closure period under Section 8.6.7 of these regulations in all other cases.

8.13.2. Required Programs.

8.13.2.a. Owners and operators subject to Section 8.13 of these regulations must conduct a monitoring and corrective action program as follows:

8.13.2.a.1. ~~Whenever the Water Resources Board's Groundwater Protection Standard Regulation, Series VII, Section 4 is exceeded, Whenever the groundwater protection standards in West Virginia Administrative Regulations, Water Resources Board, Series 7, Section 1 are exceeded,~~ the owner or operator must institute a corrective action program under Section 8.13.9 of these regulations;

8.13.2.a.2. In all other cases, the owner or operator must institute a groundwater monitoring program under Section 8.13.8 of these regulations.

8.13.2.b. In order to prevent 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, the owner or operator must institute each of these programs when they are required under Section 8.13.2.a of these regulations. The owner or operator must specify in the permit application the specific elements of the groundwater monitoring system and the elements of the corrective action program identified in Section 8.13.2.a of these regulations. These will be included in the permit application as contingency plans and shall be accompanied by an engineering feasibility plan for the corrective action program. The corrective action program must, at a minimum, include the following information:

8.13.2.b.1. A description of corrective actions that will achieve compliance with ~~the Water Resources Board's Groundwater Protection Standard Regulation, Series VII, Section 4~~ the groundwater protection standards in West Virginia Administrative Regulations, Water Resources Board, Series 7, Section 1; and

8.13.2.b.2. A plan for a groundwater monitoring program that will demonstrate the effectiveness of the corrective action. Such a groundwater monitoring program may be based on a groundwater monitoring program developed to meet the requirements of Section 8.13.8 of these regulations.

8.13.3. (Reserved).

8.13.4. Hazardous Constituents.

~~The chief will specify in the permit the hazardous constituents to which the Water Resources Board's Groundwater Protection Standard Regulation, Series VII, Section 4 applies.~~ The chief will specify in

the permit the hazardous constituents to which the groundwater protection standards in West Virginia Administrative Regulations, Water Resources Board, Series 7, Section 1 apply. Hazardous constituents are constituents identified in Appendix VIII of these regulations or constituents that caused the director to list the hazardous waste in Section 3.4 of these regulations or constituents listed in Table II of these regulations, that are reasonably expected to be in or derived from waste contained in a regulated unit or that have been detected in groundwater in the uppermost aquifer underlying a regulated unit.

8.13.5. Point of Compliance.

8.13.5.a. The chief will specify in the permit the point of compliance at which the Water Resources Board's Groundwater Protection Standard Regulation, Series VII, Section 1 applies and at which monitoring must be conducted. The chief will specify in the permit the point of compliance at which the groundwater protection standards in West Virginia Administrative Regulations, Water Resources Board, Series 7, Section 1 apply 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 through the uppermost aquifer underlying the regulated unit or as the chief specifies in the permit.

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

8.13.5.b.1. The waste management area includes horizontal space taken up by any liner, dike, or other barrier designed to contain waste in a regulated unit.

8.13.5.b.2. If the facility contains more than one regulated unit, the waste management area may be proposed in the permit application to be described by an imaginary line circumscribing the several regulated units. The chief will determine whether such a proposal is acceptable based on the distance between the regulated units and the wastes contained in each unit.

8.13.6. Compliance Period.

8.13.6.a. The compliance period is the active life of the waste management area, the closure period and the post closure period.

8.13.6.b. The compliance period begins when the owner or operator initiates a groundwater monitoring program meeting the requirements of Section 8.13.8 of these regulations.

8.13.6.c. If the owner or operator is engaged in a corrective action program at the end of the compliance period specified in Section 8.13.6.a of these regulations, the compliance period is extended until the owner or operator can demonstrate that the Water Resources Board's Groundwater Protection Standard Regulation, Series VII, Section 1 has not been exceeded for a period of three (3) consecutive years. the groundwater protection standards in West Virginia Administrative Regulations, Water Resources Board, Series 7, Section 1 have not been exceeded for a period of three (3) consecutive years.

8.13.7. Groundwater Monitoring System Requirements.

The owner or operator must comply with the following requirements for any groundwater monitoring program:

8.13.7.a. The groundwater monitoring system must consist of a sufficient number of wells installed at appropriate locations and depth to yield groundwater samples from the uppermost aquifer that:

8.13.7.a.1. Represent the quality of background groundwater that has not been affected by leakage from the regulated unit; and

8.13.7.a.2. Represent the quality of groundwater passing the point of compliance.

8.13.7.b. Well construction must meet the following standards:

8.13.7.b.1. Wells must be cased in a manner that maintains the integrity of the monitoring well bore hole;

8.13.7.b.2. Wells must be screened and packed with sand or gravel throughout the total vertical distance of the uppermost aquifer except as provided under Section 8.13.7.c of these regulations. The screened interval of an individual well should not exceed twenty (20) feet (screened intervals greater than twenty (20) feet may be permitted if the owner or operator can successfully demonstrate that the proposed interval will provide representative samples; such demonstration must be based on specific hydrogeologic conditions at the facility). In order to meet these requirements for screened intervals, nested wells or well clusters may be needed;

8.13.7.b.3. Screening shall be designed to prevent the introduction of sediment, yet allow optimum entrance velocity for water;

8.13.7.b.4. Screens and casing must be constructed of materials that are strong enough to prevent collapse and must be nonreactive, non-synergistic and noncatalytic to the hazardous constituents being monitored;

8.13.7.b.5. The annular space (i.e., the space between the bore hole wall and the well casing) above the sampling depth must be sealed to prevent contamination of samples and groundwater by entrance of materials from the surface; and

8.13.7.b.6. The wells must be installed, constructed, and maintained using the best available techniques which will provide compliance with ~~this section~~ Section 8.13.7.b of these regulations.

8.13.7.c. In locations where multiple formations comprise the uppermost aquifer the owner or operator must establish a groundwater monitoring system that isolates each stratum containing water and allows for separate sampling of each stratum containing water.

8.13.7.d. If a facility contains more than one regulated unit, separate groundwater monitoring systems may not be required for each regulated unit provided that provisions for sampling the groundwater in the uppermost aquifer will enable detection and measurement at the point of

compliance of hazardous constituents from the regulated units that have entered the groundwater in the uppermost aquifer. Requests to use such a monitoring system must be submitted in the permit application as required under Section 8.13.5.b.2 of these regulations.

8.13.8. Groundwater Monitoring Program.

An owner or operator required to establish a groundwater monitoring program must, at a minimum, discharge the following responsibilities:

8.13.8.a. General requirements:

8.13.8.a.1. The owner or operator must monitor for indicator parameters (e.g., pH, specific conductance, total organic carbon, or total organic halogen), hazardous constituents under Section 8.13.4 of these regulations or reaction products or both that provide a reliable indication of the presence of hazardous constituents in groundwater. The chief will specify the monitoring parameters (i.e., indicator parameters or reaction products or both) and constituents to be monitored in the permit, after considering the following factors:

~~8.13.8.a.1.i.~~ 8.13.8.a.1.A. The types, quantities, and concentrations of hazardous constituents in wastes managed at the regulated unit;

~~8.13.8.a.1.ii.~~ 8.13.8.a.1.B. The mobility, stability, and persistence of hazardous constituents or their reaction products in the unsaturated zone beneath the waste management area;

~~8.13.8.a.1.iii.~~ 8.13.8.a.1.C. The detectability of indicator parameters, hazardous constituents, and reaction products in groundwater; and

~~8.13.8.a.1.iv.~~ 8.13.8.a.1.D. The concentrations and coefficients of variation of proposed monitoring parameters of hazardous constituents in the background groundwater.

8.13.8.a.2. The owner or operator must install a groundwater monitoring system at the point of compliance under Section 8.13.5 of these regulations. The groundwater monitoring system must comply with Section 8.13.7 of these regulations.

8.13.8.a.3. The groundwater monitoring program must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide a reliable indication of groundwater quality below the waste management area. At a minimum the program must include procedures and techniques for:

~~8.13.8.a.3.i.~~ 8.13.8.a.3.A. Sample collection;

~~8.13.8.a.3.ii.~~ 8.13.8.a.3.B. Sample preservation and shipment;

~~8.13.8.a.3.iii.~~ 8.13.8.a.3.C. Analytical procedures; and

~~8.13.8.a.3.iv.~~ 8.13.8.a.3.D. Chain of custody control.

8.13.8.a.4. The groundwater monitoring program must include sampling and analytical methods that are appropriate for groundwater sampling.

and that accurately measure hazardous constituents in groundwater samples. Recommended methods include those outlined in 40 C.F.R. Part 136. The proposed sampling and analytical methods must be approved by the chief and upon approval, become a condition of the hazardous waste management permit.

8.13.8.a.5. The owner or operator must determine the groundwater flow rate and direction in the uppermost aquifer at least annually and determine transmissibility during initial sampling or initial well development.

8.13.8.a.6. The groundwater monitoring program must include a determination of the static water level and groundwater surface elevation each time groundwater is sampled.

8.13.8.a.7. If the owner or operator determines that the groundwater monitoring program no longer satisfies the requirements of this section Section 8.13.8.a of these regulations, he must, within ninety (90) days, submit an application for a permit modification to make any appropriate changes to the program.

8.13.8.a.8. The owner or operator must assure that monitoring and corrective action measures necessary to achieve compliance with the Water Resources Board's Groundwater Protection Standard Regulation, Series VII, Section 4 are taken during the term of the permit, the groundwater protection standards in West Virginia Administrative Regulations, Water Resources Board, Series 7, Section 1 are taken during the term of the permit.

8.13.8.a.9. The groundwater monitoring wells must be sampled to allow detection of density separated hazardous constituents or monitoring parameters which may escape from the regulated unit.

8.13.8.b. Establishing water quality concentrations:

8.13.8.b.1. The groundwater monitoring program must establish background groundwater quality concentrations for each of the hazardous constituents or monitoring parameters specified in the permit.

~~8.13.8.b.1.i~~ 8.13.8.b.1.A. The background concentration for a hazardous constituent must be based on data from upgradient wells.

~~8.13.8.b.1.ii~~ 8.13.8.b.1.B. Samples shall be obtained from upgradient well(s) each time downgradient wells are sampled. Downgradient concentrations of hazardous constituents or monitoring parameters shall be compared with upgradient concentrations to determine whether the upgradient background concentrations have been exceeded.

~~8.13.8.b.1.iii~~ 8.13.8.b.1.C. In comparing concentrations of hazardous constituents or monitoring parameters at the point of compliance with background concentrations, the owner or operator shall use the background concentration values for the current quarter. At least four (4) background concentration values collected as required under Section 8.13.8.b.1.E of these regulations must be used when utilizing the statistical test outlined in Section 8.13.8.c of these regulations.

~~8.13.8.b.4.iv.~~ 8.13.8.b.1.D. The owner or operator may propose to the chief to use background concentrations of hazardous constituents or monitoring parameters based on sampling of wells that are not upgradient from the waste management area where sampling at other wells will provide values that are as representative or more representative than those provided by the upgradient wells or in situations where the owner or operator cannot define or locate an upgradient well due to adverse hydrogeologic conditions. The owner or operator must submit the details of such a proposal to the chief for his approval. The reasons for the proposal to utilize wells that are not upgradient must be included with the proposal.

~~8.13.8.b.4.v.~~ 8.13.8.b.1.E. In developing the data base used to determine a background concentration for each monitoring parameter or hazardous constituent, the owner or operator must take a minimum of four (4) samples from each well and a minimum of four (4) samples from the entire system used to determine background groundwater quality, each time the system is sampled.

8.13.8.b.2. The owner or operator must determine the concentration of each hazardous constituent and monitoring parameter at each monitoring well at the point of compliance and each upgradient well at least quarterly during the compliance period. Intervals between sampling and the frequency of sampling will be specified in the permit. The owner or operator must express the concentrations of each hazardous constituent and monitoring parameter at each monitoring well in a form necessary for the determination of statistically significant increases under Section 8.13.8.c of these regulations.

8.13.8.c. Statistical method:

~~The owner or operator must use the following statistical procedure in determining whether the Water Resources Board's Groundwater Protection Standard Regulation, Series VII, Section 1 has been exceeded:~~

The owner or operator must use the following statistical procedure in determining whether the groundwater protection standards in West Virginia Administrative Regulations, Water Resources Board, Series 7, Section 1 have been exceeded:

8.13.8.c.1. If, in a groundwater monitoring program, the concentration of a hazardous constituent or monitoring parameter at the point of compliance is to be compared to its respective background concentration and both the background concentration data set and the point of compliance monitoring well concentration data set have been determined to be normally distributed by an appropriate method approved by the chief:

~~8.13.8.c.1.i.~~ 8.13.8.c.1.A. The owner or operator must take at least four (4) samples at each well at the point of compliance and determine whether any increase between the mean concentration of each constituent at each well (using all samples taken) and the background concentration value for the constituent is significant at the 0.05 level using the Cochran's Approximation to the Behren-Fisher Student's t-test as described in Appendix XI of these regulations. If the test indicates that the increase is significant, the owner or operator must repeat the same procedure (with at least the same number of samples as used in the

first test) using fresh samples from the monitoring well. If this second round of analyses indicates that the increase is significant, the owner or operator must conclude that a statistically significant increase has occurred; or

~~8.13.8.e.1.ii~~ 8.13.8.c.1.B. The owner or operator may request in writing for authorization to use an equivalent statistical procedure for determining whether a statistically significant increase has occurred. The chief will specify such a procedure in the permit if he finds that the alternative procedure reasonably balances the probability of falsely identifying a non-contaminating regulated unit and the probability of failing to identify a contaminating regulated unit in a manner that is comparable to that of the statistical procedure described in ~~Section 8.13.8.e.1.i~~ Section 8.13.8.c.1.A of these regulations. This alternative procedure must be appropriate for the distribution of the data.

8.13.8.c.2. In all other situations in a groundwater monitoring program the owner or operator must use a statistical procedure which provides a reasonable balance of the probability of falsely identifying a non-contaminating regulated unit and the probability of failing to identify a contaminating regulated unit. The Mann-Whitney Test (see Appendix XII of these regulations) is recommended. The owner or operator must supply to the chief a written request to use such a statistical procedure, completely describing the details of the procedure and the reasons for using it.

8.13.8.c.3. The chief will approve statistical procedures in specific cases where he finds the procedure:

~~8.13.8.e.3.i~~ 8.13.8.c.3.A. Is appropriate for the distribution of the data used to establish concentration values; and

~~8.13.8.e.3.ii~~ 8.13.8.c.3.B. Provides a reasonable balance between the probability of falsely identifying a non-contaminating regulated unit and the probability of failing to identify a contaminating regulated unit.

8.13.8.c.4. In taking samples used in the determination of concentration values, the owner or operator must use a groundwater monitoring system that complies with Section 8.13.7 of these regulations and which fulfills the requirements of Section 8.13.8 of these regulations.

8.13.8.d. Determination of significant increases:

8.13.8.d.1. The owner or operator must determine whether there is a statistically significant increase over background concentration values for any monitoring parameter or hazardous constituent specified in the permit pursuant to Section 8.13.8.a.1 of these regulations each time he determines the concentration of hazardous constituents or monitoring parameters in the groundwater at the point of compliance under Section 8.13.8.b.2 of these regulations.

~~8.13.8.d.1.i~~ 8.13.8.d.1.A. In determining whether a statistically significant increase has occurred, the owner or operator must compare the concentration of each hazardous constituent and monitoring

parameter at each individual monitoring well at the point of compliance to the background concentration value for that parameter or constituent, according to the statistical procedure specified under Section 8.13.8.c of these regulations.

~~8.13.8.d.1.iii~~ 8.13.8.d.1.B. The owner or operator must determine whether there has been a statistically significant increase at each monitoring well at the point of compliance. This will be done within the time period after completion of sampling specified in the permit. The chief will specify that time period, after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of groundwater samples.

8.13.8.d.2. If the owner or operator determines, pursuant to Section 8.13.8.d.1 of these regulations, that there is a statistically significant increase in the concentrations of any monitoring parameter or hazardous constituents specified pursuant to Section 8.13.8.a.1 of these regulations at any monitoring well at the point of compliance, he must:

~~8.13.8.d.2.i~~ 8.13.8.d.2.A. Notify the chief of this finding in writing within seven (7) days. The notification must indicate what monitoring parameter(s) or hazardous constituent(s) have shown statistically significant increases;

~~8.13.8.d.2.ii~~ 8.13.8.d.2.B. Immediately sample the groundwater in all monitoring wells and determine the concentration of all constituents identified in Appendix VIII of these regulations that are present in groundwater;

~~8.13.8.d.2.iii~~ 8.13.8.d.2.C. Establish a background value for each Appendix VIII constituent that has been found at the compliance point under ~~Section 8.13.8.d.2.ii~~ Section 8.13.8.d.2.B of these regulations as follows:

~~8.13.8.d.2.iii-A~~ 8.13.8.d.2.C.i. The owner or operator must comply with Section 8.13.8.b of these regulations in developing the data base used to determine background values;

~~8.13.8.d.2.iii-B~~ 8.13.8.d.2.C.ii. The owner or operator must express background values in a form necessary for the determination of statistically significant increases under Section 8.13.8.c of these regulations; and

~~8.13.8.d.2.iii-C~~ 8.13.8.d.2.C.iii. In taking samples used in the determination of background values, the owner or operator must use a groundwater monitoring system that complies with Sections 8.13.7.a through 8.13.7.d of these regulations;

~~8.13.8.d.2.iv~~ 8.13.8.d.2.D. Within sixty (60) days submit to the chief a written report including the following information:

~~8.13.8.d.2.iv-A~~ 8.13.8.d.2.D.i. Any proposed changes to the groundwater monitoring system at the facility necessary to meet the requirements of Section 8.13.9 of these regulations;

~~8.13.8.d.2.iv-B~~ 8.13.8.d.2.D.ii. Any proposed changes to the

monitoring frequency, sampling and analysis procedures or methods, or statistical procedures used at the facility necessary to meet the requirements of Section 8.13.9 of these regulations;

~~8.13.8.d.2.iv.6.~~ 8.13.8.d.2.D.iii. An identification of the concentration of any Appendix VIII constituents found in the groundwater at each monitoring well at the compliance point; and

~~8.13.8.d.2.iv.9.~~ 8.13.8.d.2.D.iv. If such changes are proposed under ~~Sections 8.13.8.d.2.iv.A and 8.13.8.d.2.iv.B~~ Sections 8.13.8.d.2.D.i and 8.13.8.d.2.D.ii. of these regulations, then an application for permit modification must be submitted, with the report, pursuant to Section 11.17 of these regulations; and

~~8.13.8.d.2.v.~~ 8.13.8.d.2.E. If the owner or operator determines, pursuant to Section 8.13.8.d.1 of these regulations, that there is a statistically significant increase in the concentrations of hazardous constituents specified pursuant to Section 8.13.8.a.1 of these regulations at any monitoring well at the point of compliance ~~(thereby violating the Water Resources Board's Groundwater Protection Standard Regulation, Series VII, Section 4),~~ (thereby violating the groundwater protection standards in West Virginia Administrative Regulations, Water Resources Board, Series 7, Section 1), must comply with the provisions of the corrective action program specified in the permit, unless the chief determines that a demonstration made under Section 8.13.8.d.3 of these regulations successfully shows that a source other than the regulated unit caused the increase or that the increase resulted from an error in sampling, analysis or evaluation.

8.13.8.d.3. If the owner or operator determines, pursuant to Section 8.13.8.d.1 of these regulations, ~~that the Water Resources Board's Groundwater Protection Standard Regulation, Series VII, Section 4 is being exceeded at any monitoring well at the point of compliance,~~ that the groundwater protection standards in West Virginia Administrative Regulations, Water Resources Board, Series 7, Section 1 are being exceeded at any monitoring well at the point of compliance, he may demonstrate 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 paragraph~~ Section 8.13.8.d.3 of these regulations, the owner or operator must;

~~8.13.8.d.3.i.~~ 8.13.8.d.3.A. Notify the chief in writing within seven (7) days that he intends to make a demonstration under ~~this paragraph~~ Section 8.13.8.d.3 of these regulations;

~~8.13.8.d.3.ii.~~ 8.13.8.d.3.B. Within sixty (60) days, submit a written report to the chief 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;

~~8.13.8.d.3.iii.~~ 8.13.8.d.3.C. Within ninety (90) days, submit to the chief an application for a permit modification to make any appropriate changes to the groundwater monitoring program at the facility; and

~~8.13.8.d.3.iv.~~ 8.13.8.d.3.D. Continue to monitor in accord with the groundwater monitoring program established under Section 8.13.8 of

these regulations.

8.13.9. Corrective Action Program.

An owner or operator, required to establish a corrective action program under Section 8.13 of these regulations must, at a minimum, discharge the following responsibilities:

8.13.9.a. The owner or operator must take corrective action to ensure that regulated units are in compliance with the Water Resources Board's Groundwater Protection Standard Regulation, Series VII, Section 4 the groundwater protection standards in West Virginia Administrative Regulations, Water Resources Board, Series 7, Section 1.

8.13.9.b. The owner or operator must implement a corrective action program that prevents hazardous constituents from exceeding their respective background concentrations in groundwater by removing the hazardous constituents from the groundwater. The contingency plan in the permit will specify the specific measure that will be taken.

8.13.9.c. The owner or operator must begin corrective action within the time period specified in the permit contingency plan after the Water Resources Board's Groundwater Protection Standard Regulation, Series VII, Section 4 is exceeded the groundwater protection standards in West Virginia Administrative Regulations, Water Resources Board, Series 7, Section 1 are exceeded.

8.13.9.d.1. In conjunction with a corrective action program, the owner or operator must establish and implement a groundwater monitoring program to demonstrate the effectiveness of the corrective action program. Such a monitoring program may be based on the requirements for a groundwater monitoring program under Section 8.13.8 of these regulations and must be as effective as that program in determining compliance with the Water Resources Board's Groundwater Protection Standard Regulation, Series VII, Section 4 the groundwater protection standards in West Virginia Administrative Regulations, Water Resources Board, Series 7, Section 1.

8.13.9.d.2. The owner or operator must analyze samples from all monitoring wells for all constituents contained in Appendix VIII of these regulations at least once prior to terminating the corrective action program to determine if there is a need for further corrective action. The owner or operator shall report the results of full Appendix VIII sample analyses to the chief within seven (7) days after completion of the analyses.

8.13.9.e. In addition to the other requirements of this section Section 8.13.9 of these regulations, the owner or operator must conduct a corrective action program to remove any hazardous constituents under Section 8.13.4 of these regulations that exceed their respective background concentrations in groundwater at the point of compliance under Section 8.13.6 of these regulations or between the point of compliance and the downgradient facility property boundary. The contingency plans submitted in the permit application will specify the measures to be taken.

8.13.9.e.1. Corrective action measures under this paragraph Section

8.13.9.e. of these regulations must be initiated and completed within a reasonable time considering the extent of contamination.

8.13.9.e.2. Corrective action measures under this paragraph Section 8.13.9.e of these regulations may be terminated once the concentration of hazardous constituents under Section 8.13.4 is reduced to levels below their respective background concentrations.

8.13.9.f. The owner or operator must continue corrective action measures during the compliance period to the extent necessary to ensure that the ~~Water Resources Board's Groundwater Protection Standard Regulation, Series VII, Section 4~~ is not exceeded the groundwater protection standards in West Virginia Administrative Regulations, Water Resources Board, Series 7, Section 1 are 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 above standard. The owner or operator may terminate corrective action measures taken beyond the compliance period if he can demonstrate, based on data from the groundwater monitoring program under Section 8.13.9.d of these regulations, that ~~the Water Resources Board's Groundwater Protection Standard Regulation, Series VII, Section 4 has not been exceeded for a period of three (3) consecutive years~~ the groundwater protection standards in West Virginia Administrative Regulations, Water Resources Board, Series 7, Section 1 have not been exceeded for a period of three (3) consecutive years.

8.13.9.g. The owner or operator must report in writing to the chief on the effectiveness of the corrective action program. The owner or operator must submit these reports semiannually.

8.13.9.h. If the owner or operator determines that the corrective action program no longer satisfies the requirements of ~~this section~~ Section 8.13.9 of these regulations, he must, within sixty (60) days submit an application for a permit modification to make any appropriate changes to the program.

8.13.9.i. If the owner or operator elects to pursue a corrective action program other than that outlined in the permit contingency plan, he must notify the chief of his decision, in writing, within fifteen (15) days of the determination made under Section 8.13.8.d of these regulations. The owner or operator must obtain approval to implement any alternate corrective action plan from the chief and begin implementation of such plan, within ninety (90) days of the determination made under Section 8.13.8.d of these regulations. If the alternate plan is not approved or in effect within ninety (90) days, the owner or operator must immediately begin implementation of the original corrective action program outlined in the permit contingency plan.

8.13.9.j. If the chief determines that groundwater quality has been affected by a regulated unit prior to or upon receipt of a Part B application, the owner or operator shall be required to implement a corrective action program immediately upon issuance of the permit.

8.13.10. (Reserved).

8.13.11. (Reserved).

8.13.12. (Reserved).

8.13.13. (Reserved).

8.13.14. (Reserved).

8.13.15. (Reserved).

8.13.16. (Reserved).

8.13.17. (Reserved).

8.13.18. (Reserved).

8.13.19. (Reserved).

8.13.20. (Reserved).

§47-35-9. Standards for Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities.

9.1. (Reserved).

9.2. (Reserved).

9.3. Recyclable Materials Used in a Manner Constituting Disposal.

9.3.1. Applicability.

9.3.1.a. Section 9.3.1 of these regulations applies to recyclable materials that are applied to or placed on the land;

9.3.1.a.1. Without mixing with any other substances; or

9.3.1.a.2. After mixing with any other substances that are not hazardous wastes, unless the recyclable material undergoes a chemical reaction so as to become inseparable from the other substances by physical means; or

9.3.1.a.3. After combination with any other substances if the resulting combined material is not produced for the general public's use.

9.3.1.a.4. The materials identified in Sections 9.3.1.a.1 through 9.3.1.a.3 of these regulations will be referred to throughout ~~this section~~ Section 9 of these regulations as "materials used in a manner that constitutes disposal."

9.3.1.b. 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 these regulations if the recyclable materials have undergone chemical reaction in the course of producing the product so as to become inseparable by physical means. Commercial fertilizers that are produced for the general public's use that contain recyclable material also are not presently subject to these regulations.

9.3.2. Standards Applicable to Generators and Transporters of Materials Used in a Manner That Constitutes Disposal.

Generators and transporters of materials that are used in a manner that constitutes disposal are subject to applicable requirements of Sections 4, 5, and 6 of these regulations as well as the applicable provisions of West Virginia Administrative Regulations, Department of Highways, Series 7 ~~Transportation of Hazardous Waste by Highway Transporters~~, and West Virginia Administrative Regulations, Public Service Commission, Series 11. ~~Transporting Hazardous Waste by Rail~~

9.3.3. Standards Applicable to Storers of Materials That are to be Used in a Manner That Constitutes Disposal Who are not the Ultimate Users.

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 Sections 4, 8, 11, and 13 of these regulations, and Subparts A through L of 40 C.F.R. Part 265.

9.3.4. Standards Applicable to Users of Materials That are Used in a Manner That Constitutes Disposal.

Owners or operators of facilities that use recyclable materials in a manner that constitutes disposal are subject to all applicable provisions of Sections 4, 8, 11, and 13 of these regulations, and Subparts A through N of 40 C.F.R. Part 265. These requirements do not apply to products which contain these recyclable materials under the provisions of Sections 9.3.1.b of these regulations.

9.4. Hazardous Waste Burned for Energy Recovery.

9.4.1. Applicability.

9.4.1.a. The provisions of Section 9.4 of these regulations apply to hazardous wastes that are burned for energy recovery in any boiler or industrial furnace except as provided by Section 9.4.1.b of these regulations. Such hazardous wastes burned for energy recovery are termed "hazardous waste fuel." However, hazardous waste fuels produced from hazardous waste by blending or other treatment by a person who neither generated the waste nor burns the fuel are not subject to regulation at the present time.

9.4.1.b. The following hazardous wastes are not regulated under Section 9.4 of these regulations:

9.4.1.b.1. Used oil burned for energy recovery that is also a hazardous waste solely because it exhibits a characteristic of hazardous waste identified in Section 3.3 of these regulations. Such used oil is

subject to regulation under Section 9.5 of these regulations rather than under the regulations of ~~this section~~ and Section 9.4 of these regulations.

9.4.1.b.2. Wastes that are exempt from regulation under the provisions of Section 3.1.3.b of these regulations and hazardous wastes that are subject to the special requirements for conditionally exempt small quantity generators under the provisions of Section 10 of these regulations.

9.4.2. Prohibitions. (Reserved).

9.4.3. Standards Applicable to Generators of Hazardous Waste Fuel.

9.4.3.a. Generators of hazardous waste fuel are subject to the requirements of Section 6 of these regulations except that Section 9.4.7 of these regulations exempts certain spent materials and by-products from these provisions;

9.4.3.b. Generators who are marketers also must comply with Section 9.4.5 of these regulations.

9.4.3.c. Generators who are burners also must comply with Section 9.4.6 of these regulations.

9.4.4. Standards Applicable to Transporters of Hazardous Waste Fuel.

9.4.4.a. Transporters of hazardous waste fuel from generator to marketer, or from a generator to a burner are subject to the requirements of either Section 5 of these regulations or the applicable regulations of the West Virginia Department of Highways or Public Service Commission of West Virginia regarding hazardous waste transporters, except that Section 9.4.7 of these regulations exempts certain spent materials and by-products from these provisions.

9.4.4.b. Transporters of hazardous waste fuel are not presently subject to regulation when they transport hazardous waste fuel from marketers, who are not also the generators of the waste, to burners or other marketers.

9.4.5. Standards Applicable to Marketers of Hazardous Waste Fuel.

Persons who market hazardous waste fuel are called "marketers". Marketers include generators who market hazardous waste fuel directly to a burner, and persons who receive hazardous waste from generators and produce, process, or blend hazardous waste fuel from these hazardous wastes. Persons who distribute but do not process or blend hazardous waste fuel are also marketers, but are not presently subject to regulation. Marketers (other than distributors) are subject to the following requirements:

9.4.5.a. (Reserved).

9.4.5.b. (Reserved).

9.4.5.c. Storage.

9.4.5.c.1. Marketers who are generators are subject to the requirements of Section 6.3.5 of these regulations or to Sections 8.1 through 8.10, 8.13, 11, and 13 of these regulations or 40 C.F.R. Part 124, Subparts A through L of 40 C.F.R. Part 265, and Part 270, except as provided by Section 9.4.7 of these regulations for certain spent materials and by-products;

9.4.5.c.2. Marketers who receive hazardous wastes from generators, and produce, process, or blend hazardous waste fuel from these hazardous wastes, are subject to regulation under all applicable provisions of Sections 8.1 through 8.10, 8.13, 11, and 13 of these regulations or 40 C.F.R. Part 124, Subparts A through L of 40 C.F.R. Part 265, and Part 270, except as provided by Section 9.4.7 of these regulations for certain spent materials and by-products.

9.4.6. Standards Applicable to Burners of Hazardous Waste Fuel.

9.4.6.a. (Reserved).

9.4.6.b. (Reserved).

9.4.6.c. Burners that store hazardous waste fuel prior to burning are subject to the requirements of Section 6.3.5 of these regulations, or to all applicable requirements in Sections 8.1 through 8.10, 8.13, and 13 of these regulations or Subparts A through L of 40 C.F.R. Part 265, with respect to such storage, except as provided by Section 9.4.7 of these regulations for certain spent materials and by-products.

9.4.7. Conditional exemption for spent materials and by-products exhibiting a characteristic of hazardous waste.

9.4.7.a. Except as provided in Section 9.4.7.b of these regulations, hazardous waste fuels that are spent materials and by-products and that are hazardous only because they exhibit a characteristic of hazardous waste are not subject to the notification requirements of Section 4 of these regulations or the generator, transporter, or storage requirements of the State Act.

9.4.7.b. This exemption does not apply when the spent material or by-product is stored in a surface impoundment prior to burning.

9.5. (Reserved).

9.6. Recyclable Materials Utilized for Precious Metal Recovery.

~~9.6.a.~~ 9.6.1. The regulations of ~~this section~~ Section 9.6 of these regulations apply to recyclable materials that are reclaimed to recover economically significant amounts of gold, silver, platinum, palladium, irridium, osmium, rhodium, ruthenium, or any combination of these.

~~9.6.b.~~ 9.6.2. Persons who generate, transport, or store recyclable materials that are subject to Section 9.6 of these regulations are subject to the following requirements:

~~9.6.b.1.~~ 9.6.2.a. Notification requirements of Section 4 of these regulations.

~~9-6-e-2-~~ 9.6.2.b. Section 6.2 of these regulations for generators, 40 C.F.R. §§263.20 and 263.21 for transporters, and 40 C.F.R. §§265.71 and 265.72 for persons who store recyclable materials.

~~9-6-e-~~ 9.6.3. Persons who store recyclable materials that are subject to ~~this--section~~ Section 9.6 of these regulations must keep the following records to document that they are not accumulating these materials speculatively (as defined in ~~Section-3-4-b~~ Section 3.1.1.b of these regulation):

~~9-6-e-1-~~ 9.6.3.a. Records showing the volume of these materials stored at the beginning of the calendar year;

~~9-6-e-2-~~ 9.6.3.b. The amount of these materials generated or received during the calendar year; and

~~9-6-e-3-~~ 9.6.3.c. The amount of these materials remaining at the end of the calendar year.

~~9-6-d-~~ 9.6.4. Recyclable materials that are regulated under this section Section 9.6 of these regulations that are accumulated speculatively (as defined in ~~Section-3-4-b~~ Section 3.1.1.b of these regulations) are subject to all applicable provisions of Sections 5 through 8, 11, and 13 of these regulations and 40 C.F.R. Part 265.

9.7. Reclaimed Spent Lead-Acid Batteries.

~~9-7-a-~~ 9.7.1. Section 9.7 of these regulations applies to persons who reclaim spent lead-acid batteries that are recyclable materials ("spent batteries"). Persons who generate, transport, or collect spent batteries, or who store spent batteries but do not reclaim them are not subject to the requirements of Sections 4 through 9, 11, or 13 of these regulations, nor 40 C.F.R. Part 265.

~~9-7-b-~~ 9.7.2. Owners or operators of facilities that store spent batteries before reclaiming them are subject to the following requirements:

~~9-7-b-1-~~ 9.7.2.a. The notification requirements of Section 4 of these regulations;

~~9-7-b-2-~~ 9.7.2.b. All applicable provisions of Sections 8.1 through 8.10 of these regulations, except Section 8.2.3 of these regulations concerning waste analysis and Sections 8.5.2 and 8.5.3 of these regulations concerning use of the manifest and manifest discrepancies, and Section 13 of these regulations.

~~9-7-b-3-~~ 9.7.2.c. All applicable provisions of Subpart A, Subpart B except Section 265.13 (waste analysis), Subpart C, Subpart D, Subpart E except Sections 265.71 and 265.72 (dealing with use of the manifest and manifest discrepancies), and Subparts F through L of 40 C.F.R. Part 265; and

~~9-7-b-4-~~ 9.7.2.d. All applicable provisions of Section 11 of these regulations.

§47-35-10. Special Requirements for Hazardous Waste Generated by Small

Quantity Generators.

10.1. Except as provided in Sections 10.1.1 through 10.1.5 of these regulations, hazardous wastes generated by small quantity generators who generate greater than one hundred (100) kilograms but less than one thousand (1,000) kilograms of hazardous wastes are subject to all provisions of these regulations.

10.1.1. **Reclaimed Waste.** The requirements of Section 6.2 of these regulations do not apply to hazardous waste produced by generators of greater than one hundred (100) kilograms but less than one thousand (1,000) kilograms in a calendar month where:

10.1.1.a. The waste is reclaimed under a contractual agreement pursuant to which:

10.1.1.a.1. The type of waste and frequency of shipments are specified in the agreement;

10.1.1.a.2. 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

10.1.1.b. The generator maintains a copy of the reclamation agreement in his files for a period of at least three (3) years after termination or expiration of the agreement.

10.1.2. **Record Keeping.** A generator who generates greater than one hundred (100) kilograms but less than one thousand (1,000) kilograms of hazardous waste in a calendar month is exempt from the requirements of Section 6.4 of these regulations except for the record keeping requirements in Sections 6.4.1.a, 6.4.1.c, 6.4.1.d and 6.4.4 of these regulations.

10.1.3. **Accumulation Time; Contingency Plan and Emergency Procedures.** A generator who generates greater than one hundred (100) kilograms but less than one thousand (1,000) kilograms of hazardous waste in a calendar month may accumulate hazardous waste on site for one hundred and eighty (180) days or less without a permit or without having interim status provided that:

10.1.3.a. The quantity of waste accumulated on site never exceeds six thousand (6,000) kilograms;

~~10.1.3.b. The generator complies with the requirements of Section 6.3.5.a.4 of these regulations, except the generator need not comply with 40 C.F.R. §265.176;~~

10.1.3.b. The generator complies with the requirements of 40 C.F.R. §265.201 and Section 6.3.5.a.1 of these regulations, except the generator need not comply with 40 C.F.R. §265.176;

10.1.3.c. The generator complies with the requirements of Sections 6.3.5.a.2 and 6.3.5.a.4 of these regulations and the requirements of Subpart C of 40 C.F.R. Part 265; and

10.1.3.d. The generator complies with the following requirements:

10.1.3.d.1. 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 Section 10.1.3.d.4 of these regulations. This employee is the emergency coordinator.

10.1.3.d.2. The generator must post the following information next to the telephone:

10.1.3.d.2.A. The name and telephone number of the emergency coordinator;

10.1.3.d.2.B. Location of fire extinguishers and spill control material, and, if present, fire alarm; and

10.1.3.d.2.C. The telephone number of the fire department, unless the facility has a direct alarm.

10.1.3.d.3. 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.

10.1.3.d.4. The emergency coordinator or his designee must respond to any emergencies that arise. The applicable responses are as follows:

10.1.3.d.4.A. In the event of a fire, call the fire department or attempt to extinguish it using a fire extinguisher;

10.1.3.d.4.B. 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;

10.1.3.d.4.C. 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 National Response Center at 1-800-424-8802. The report must include the following information:

10.1.3.d.4.C.i. The name, address, and EPA identification number of the generator;

10.1.3.d.4.C.ii. Date, time, and type of incident (e.g., spill or fire);

10.1.3.d.4.C.iii. Quantity and type of hazardous waste involved in the incident;

10.1.3.d.4.C.iv. Extent of injuries, if any; and

10.1.3.d.4.C.v. Estimated quantity and disposition of recovered materials, if any.

10.1.4. **Extended Accumulation Time.** A generator who generates greater than one hundred (100) kilograms but less than one thousand (1,000) kilograms of hazardous waste in a calendar month and who must transport

his waste, or offer his waste for transportation, over a distance of two hundred (200) miles or more for off-site treatment, storage, or disposal may accumulate hazardous waste on-site for two hundred and seventy (270) days or less without a permit or without having interim status provided that he complies with the requirements of Section 10.1.3 of these regulations.

10.1.5. **Small Quantity Generator Storage Facilities.** A generator who generates greater than one hundred (100) kilograms but less than one thousand (1,000) kilograms of hazardous waste in a calendar month and who accumulates hazardous waste in quantities exceeding six thousand (6000) kilograms or accumulates hazardous waste for more than one hundred and eighty (180) days (or for more than two hundred and seventy (270) days if he must transport his waste, or offer his waste for transportation over a distance of two hundred (200) miles or more) is an operator of a storage facility and is subject to the requirements of Section 8 of these regulations and 40 C.F.R. Part 265 and the permit requirements of 40 C.F.R. 270 unless he has been granted an extension to the one hundred and eighty day (180) period, or the two hundred and seventy day (270) day period if applicable. Such extension may be granted by the chief if hazardous wastes must remain on-site for longer than one hundred and eighty (180) days (or two hundred and seventy (270) days if applicable) due to unforeseen, temporary, and uncontrollable circumstances. An extension of up to thirty (30) days may be granted at the discretion of the chief on a case-by-case basis.

10.2. Special Requirements for Hazardous Wastes Generated by Conditionally Exempt Small Quantity Generators.

10.2.1. A generator is conditionally exempt small quantity generator in a calendar month if he generates no more than one hundred (100) kilograms of hazardous waste in that month:

10.2.2. Except for those wastes identified in Sections 10.2.5, 10.2.7, and 10.2.10 of these regulations, a conditionally exempt small quantity generator's hazardous wastes are not subject to regulation under Sections 6, 8, 9, and 11 of these regulations and 40 C.F.R. Part 265, provided the generator complies with the requirements of Sections 10.2.6, 10.2.7, and 10.2.10 of these regulations.

10.2.3. Hazardous waste that is not subject to regulation or that is subject only to ~~Sections 6.4.1, 6.4.2,~~ Sections 6.1.2, 6.1.3, 6.4.1.c, and 6.4.2 of these regulations is not included in the quantity determinations of this section and Sections 6, 8, 9, and 11 of these regulations and 40 C.F.R. Part 265 and is not subject to any of the requirements of those sections or part. Hazardous waste that is subject to the requirements of ~~Sections 3.1.6.d, 3.1.6.e, 3.1.6.f,~~ Sections 3.1.6.d, 3.1.6.e, 3.1.6.f, 9.3, 9.4, and 9.6 of these regulations is included in the quantity determination of all provisions of these regulations.

10.2.4. In determining quantity of hazardous wastes generated a generator need not include:

10.2.4.a. Hazardous waste when it is removed from on-site storage; or

10.2.4.b. Hazardous waste produced by on-site treatment (including

reclamation) or his hazardous waste so long as the hazardous waste that is treated was counted once; or

10.2.4.c. Spent materials that are generated, reclaimed, and subsequently reused on-site so long as such spent materials have been counted once.

10.2.5. Acutely Hazardous Wastes. If a generator generates acute hazardous waste in a calendar month in quantities greater than set forth below, all quantities of acute hazardous wastes are fully subject to these regulations.

10.2.5.a. A total of one (1) kilogram of acute hazardous waste listed in Section 3.4.4.e of these regulations.

10.2.5.b. A total of one hundred (100) kilograms of any residue or contaminated soil, waste, or other debris resulting from the clean-up of a spill into or on any land or water of any acute hazardous wastes listed in Section 3.4.4.e of these regulations.

10.2.6. Accumulation of Hazardous Waste in Quantities Greater Than Small Quantity Amounts. A conditionally exempt small quantity generator may accumulate hazardous waste on site. If he accumulates at any time more than a total of one thousand (1,000) kilograms of his hazardous wastes or his acutely hazardous wastes in quantities greater than those set forth in Sections 10.2.5.a and 10.2.5.b of these regulations, all of those accumulated wastes for which the accumulation limit was exceeded are fully subject to these regulations. If he accumulates at any time more than a total of one thousand (1,000) kilograms of his hazardous wastes which are not acutely hazardous, all of those accumulated wastes are subject to regulation under the special provisions of Section 10.1 of these regulations applicable to generators of between one hundred (100) kilograms and one thousand (1,000) kilograms of hazardous waste in a calendar month. The time period of Section 10.1.3 of these regulations for accumulation of wastes on-site begins for a conditionally exempt small quantity generator when the accumulated wastes exceed the applicable exclusion level for acutely hazardous wastes or when the accumulated wastes exceeds one thousand (1,000) kilograms for hazardous wastes not acutely hazardous.

10.2.7. Exclusion from Regulation. In order for hazardous waste generated by a conditionally exempt small quantity generator generating less than one hundred (100) kilograms of hazardous wastes per month or less than or equal to the quantities of acutely hazardous wastes set forth in Section 10.2.5 of these regulations to be excluded from full regulation under ~~this section~~ Section 10.2.7 of these regulations, the generator must comply with the following requirements:

10.2.7.a. ~~Sections 4 and 6.1.2~~ Sections 4 and 6.1.2 of these regulations.

10.2.7.b. Store on-site hazardous waste in compliance with the requirements of Section 10.2.6 of these regulations.

10.2.7.c. Establish and maintain on-site a written record specifying the quantity and types of hazardous wastes disposed of, the dates the

wastes were transported off-site, and the final disposition of the wastes. This recordkeeping requirement is only applicable to manufacturing facilities listed in Standard Industrial Classification Major Groups 20 through 39.

10.2.7.d. Either treat or dispose of his hazardous waste in an on-site facility, or ensure delivery to an off-site storage, treatment, or disposal facility, either of which:

10.2.7.d.1. Is permitted under 40 C.F.R. Part 270;

10.2.7.d.2. Is in interim status under 40 C.F.R. Parts 265 and 270 or under the State Act;

10.2.7.d.3. Is permitted under Section 11 of these regulations;

10.2.7.d.4. Is authorized to manage hazardous waste by a state with a hazardous waste program approved under 40 C.F.R. Part 271;

10.2.7.d.5. Is permitted, licensed, or registered by a state other than West Virginia to manage municipal or industrial solid waste;

10.2.7.d.6. Beneficially uses or re-uses, or legitimately recycles or reclaims, his waste; or

10.2.7.d.7. Treats his waste prior to beneficial use or re-use or legitimate recycling or reclamation.

10.2.8. Hazardous waste subject to the reduced requirements of Section 10.2 of these regulations may be mixed with nonhazardous waste and remain subject to these reduced requirements even though the resultant mixture exceeds the quantity limitations identified in Section 10.2 of these regulations, unless the mixture meets any of the characteristics of hazardous wastes identified in Section 3.3 of these regulations.

10.2.9. If any person mixes a waste with a hazardous waste that exceeds a quantity exclusion level of Section 10.2 of these regulations, the mixture is subject to full regulation.

10.2.10. If a conditionally exempt small quantity generator's wastes are mixed with used oil, the mixture is subject to Section 9.5 of these regulations if it is destined to be burned for energy recovery. Any material produced from such a mixture by processing, blending, or other treatment is also so regulated if it is destined to be burned for energy recovery.

§47-35-11. Hazardous Waste Permitting Program.

11.1. Scope of the Hazardous Waste Management Permit Requirements.

These regulations require a permit for the treatment, storage, or disposal of any hazardous waste unless expressly excluded by these regulations or the State Act.

11.1.1. Specific Inclusions.

Without limiting in any way the scope of the permit requirements as set

forth in Section 11.1 of these regulations, hazardous waste management permits are required for: treatment, storage, or disposal of hazardous waste at facilities requiring an NPDES permit. The owner and operator of a POTW receiving hazardous waste will be deemed to have a hazardous waste management permit for that waste if they comply with the requirements of Section 11.8.1 of these regulations.

11.1.2. Specific Exclusions.

The following are not required to obtain a hazardous waste management permit:

11.1.2.a. Generators who accumulate hazardous waste on site for less than the time periods provided in Sections 6.3.5.a, 10.1.3, and 10.1.4 of these regulations.

11.1.2.b. Farmers who dispose of hazardous waste pesticides from their own use as provided in Section 6.5.2 of these regulations.

11.1.2.c. Persons who own or operate facilities operated solely for the treatment, storage or disposal of hazardous waste excluded from regulations ~~under this section by Section 3.1.3 or 10 of these regulations~~ under Section 11 of these regulations by Section 3.1.4 or 10 of these regulations.

11.1.2.d. Owners or operators of totally enclosed treatment facilities, as defined in Section 2 of these regulations.

11.1.2.e. Owners and operators of elementary neutralization units or wastewater treatment units as defined in Section 2 of these regulations.

11.1.2.f. Transporters storing manifested shipments of hazardous waste in containers meeting the requirements of Section 6.3.1 of these regulations at a transfer facility for a period of ten (10) days or less.

11.1.2.g. A person is not required to obtain a hazardous waste management permit for treatment or containment activities taken during immediate response to any of the following situations:

~~44-4-2-g-1-~~ 11.1.2.g.1. A discharge of a hazardous waste;

~~44-4-2-g-2-~~ 11.1.2.g.2. An imminent and substantial threat of a discharge of hazardous waste; or

~~44-4-2-g-3-~~ 11.1.2.g.3. A discharge of a material which, when discharged, becomes a hazardous waste.

~~44-4-2-g-4-~~ 11.1.2.h. 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 section~~ Section 11 of these regulations for those activities.

~~44-4-2-g-5-~~ 11.1.2.i. Persons adding absorbent material to hazardous waste in a container and persons adding hazardous waste to absorbent material in a container, provided that these actions occur at the time

hazardous waste is first placed in the container and Sections 8.2.8.b, 8.7.2, and 8.7.3 of these regulations are complied with.

11.1.3. (Reserved).

11.2. Application for a Permit.

11.2.1. Permit Application.

Any person who is required to have a hazardous waste management permit shall complete, sign, and submit an application to the chief as described in ~~this section~~ Section 11.2 of these regulations. Persons covered by permits by rule need not apply.

11.2.2. Who Applies.

When a facility or activity is owned by one person but is operated by another person, it is the operator's duty to obtain a permit; however, the owner must also sign the permit application.

11.2.3. Completeness.

The chief shall not issue a permit before receiving a complete application, except permits by rule or emergency permits. An application for a permit is complete when the chief receives an application form and any supplemental information which are completed to the chief's satisfaction.

11.2.4. Existing Hazardous Waste Management Facilities.

11.2.4.a. Not later than thirty (30) days from the effective date of these regulations, all owners and operators of existing hazardous waste treatment, storage or disposal facilities shall submit Part A (see Section 11.4 of these regulations) of their permit application to the chief or a copy of Part A if it was already submitted to EPA.

11.2.4.b. For generators generating greater than one hundred (100) kilograms but less than one thousand (1,000) kilograms of hazardous waste in a calendar month and treats, stores, or disposes of these wastes, Part A, or a copy of Part A if it was already submitted to EPA, shall be submitted not later than thirty (30) days from the effective date of these regulations or by March 24, 1987, whichever is later.

11.2.4.c. At any time, but not later than five (5) years, after the effective date of these regulations, the owner and operator of an existing hazardous waste management facility may be requested to submit Part B (see Section 11.5 of these regulations) of their permit application by the chief. Any owner or operator shall have six (6) months from the date of request to submit Part B of the application. Any owner or operator of an existing hazardous waste management facility may voluntarily submit Part B of the application at any time.

11.2.4.d. Failure to furnish a requested part B application on time, or to furnish in full the information required by the Part B application, are grounds for termination of interim status under Section 11.3.5 of these regulations.

11.2.5. New Hazardous Waste Management Facilities.

11.2.5.a. No person shall begin physical construction on a new hazardous waste management facility without having submitted Part A and Part B of the permit application and having received a finally effective hazardous waste management permit.

11.2.5.b. An application for a permit for a new hazardous waste management facility may be filed any time after the effective date of these regulations. The application shall be filed with the chief. All applications shall be submitted at least one hundred eighty (180) days before physical construction is expected to commence.

11.2.5.c. The chief shall notify the applicant in writing within ninety (90) days from the date on which Part B application is filed if the application is complete; provided, however that if the chief determines that the complexity of the application or other circumstances warrant an extension of the ninety (90) day period of review, the chief shall so notify the applicant.

11.2.6. Updating Permit Applications.

11.2.6.a. An amended part a shall be filed with the chief as necessary to comply with provisions of Section 11.3.3 of these regulations for changes during interim status.

11.2.6.b. The owner or operator of a facility who fails to comply with the updating requirements does not receive interim status as to the wastes not covered by a duly filed Part A application.

11.2.7. Reapplications.

Any hazardous waste management facility with an effective permit shall submit a new application at least one hundred eighty (180) days before the expiration date of the effective permit, unless permission for a later date has been granted by the chief. The chief will not grant permission for applications to be submitted later than the expiration date of the existing permit.

11.2.8. Application Fees.

11.2.8.a. Any person who applies for a permit for the construction or operation of a hazardous waste management facility, or both, shall submit as part of said application a money order or cashier's check payable to "the Hazardous Waste Management Fund" of the State Treasury. Persons required to obtain a permit-by-rule pursuant to these regulations are not required to pay a permit application fee.

11.2.8.b. Such fee shall be determined by the schedule set forth below in Table VII of these regulations:

TABLE VII
Permit Application Fee Schedule

STORAGE

EPA Code	Activity	Fee	
S01	Drum	<100 tons capacity \$1,000.00	≥100 tons capacity \$3,000.00
S02	Tank	<100 tons capacity \$1,000.00	≥100 tons capacity \$3,000.00
S03	Waste Pile	<100 tons capacity \$1,500.00	≥100 tons capacity \$3,000.00
S04	Surface Impoundment	<1,000 tons capacity \$2,500.00	≥1,000 tons capacity \$3,000.00

DISPOSAL

EPA Code	Activity	Fee	
D80	Landfill	<1,000 tons/year \$2,500.00	≥1,000 tons/year \$5,000.00
D81	Land Application	<1,000 tons/year \$2,500.00	≥1,000 tons/year \$5,000.00
D83	Surface Impoundment	<1,000 tons/year \$2,500.00	≥1,000 tons/year \$5,000.00

TREATMENT

EPA Code	Activity	Fee	
T01	Tank	<100 tons capacity \$1,000.00	≥100 tons capacity \$3,000.00
T02	Surface Impoundment	<1,000 tons/year \$2,500.00	≥1,000 tons/year \$3,000.00
T03	Incinerator	<1,000 tons/year \$1,000.00	≥1,000 tons/year \$3,000.00
T04	Other		

11.2.8.c. The chief reserves his right to promulgate rules and regulations establishing a permit renewal fee at a later date.

11.2.8.d. (Reserved).

11.3. Interim Status.

11.3.1. Qualifying for Interim Status.

11.3.1.a. Any person who owns or operates an existing facility, or a facility in existence as of July 10, 1981, shall have interim status and shall be treated as having been issued a permit to the extent they:

11.3.1.a.1. Comply with the interim status requirements of the EPA established pursuant to Section 3005 of the federal Solid Waste Disposal Act;

11.3.1.a.2. Operate the facility in such a manner as will not cause or create a substantial risk of a health hazard or public nuisance or a significant adverse effect upon the environment; and

11.3.1.a.3. Make a timely and complete application for such permit in accordance with these regulations;

11.3.1.b. If the chief determines that a facility is not complying with the requirements of Section 11.3.1 of these regulations, he may terminate interim status of any owner or operator. Such termination will be in the form of an order stating the reasons for the termination and shall inform the operator that he is subject to an enforcement action for operation without a permit;

11.3.1.b.1. Failure to Qualify for Interim Status. If the chief has reason to believe upon examination of a Part A application that it fails to meet the requirements of Section 11.4 of these regulations he shall notify the owner or operator in writing of the apparent deficiency. Such notice shall specify the grounds for the chief's belief that the application is deficient. The owner or operator shall have thirty (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 chief determines that the application is deficient he may take appropriate enforcement action.

11.3.1.c. Any person who owns or operates an existing facility which was not previously required to have a permit under the Act because it managed no hazardous wastes identified or listed under Section 3 of these regulations, but which due to a revision of Section 3 of these regulations is later required to have a permit, shall also have interim status and shall be treated as having been issued a permit to the extent such person:

11.3.1.c.1. Has notified the chief within ninety (90) days from the effective date of any revision of Section 3 of these regulations of such hazardous waste activity by the use of EPA Form 8700-12 or the provision of the same information in any other manner selected by the notifier; and

11.3.1.c.2. Complies with and continues to operate in compliance with the interim status requirements of the Environmental Protection Agency established pursuant to Section 3005 of the Federal Solid Waste Disposal Act, as amended, if applicable within ninety (90) days from the effective date of such revision to Section 3 of these regulations, and operates in such a manner as will not cause or create a substantial risk of a health hazard or public nuisance or a significant adverse effect upon the environment; and

11.3.1.c.3. Makes a timely and complete application for a permit as required by Section 11 of these regulations.

11.3.2. Coverage. During the interim status period, the facility shall not:

11.3.2.a. Treat, store, or dispose of hazardous waste not specified in Part A of the permit application.

11.3.2.b. Employ processes not specified in Part A of the permit application.

11.3.2.c. Exceed the design capabilities specified in Part A of the permit application.

11.3.3. Changes During Interim Status.

11.3.3.a. New hazardous wastes not previously identified in Part A of the permit application may be treated, stored, or disposed of at a facility if the owner or operator submits a revised Part A permit application prior to such a change.

11.3.3.b. Increases in the design capacity of processes used at a facility may be made 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 chief approves the change because of a lack of available treatment, storage, or disposal capacity at other hazardous waste management facilities.

11.3.3.c. Changes in the processes for the treatment, storage, or disposal of hazardous waste may be made at a facility or additional processes may be added if the owner or operator submits a revised Part A prior to such a change along with a justification explaining the need for the change and the chief approves the change because:

11.3.3.c.1. It is necessary to prevent a threat to human health or the environment because of an emergency situation; or

11.3.3.c.2. It is necessary to comply with federal regulations or State or local laws; or

11.3.3.c.3. Proposed changes are demonstrated to result in safer or environmentally more acceptable processes.

11.3.3.d. Changes in the ownership or operational control of a facility may be made if the new owner or operator submits a revised Part A permit application no later than ninety (90) days prior to the scheduled change. When a transfer of ownership or operational control

of a facility occurs, the old owner or operator shall comply with all applicable financial requirements until the new owner or operator has demonstrated to the chief that it is complying with such financial requirements. The new owner or operator must demonstrate compliance with applicable financial requirements within six (6) months of the date of the change in ownership or operational control of the facility. Upon demonstration to the chief by the new owner or operator of compliance with the financial requirements, the chief shall notify the old owner or operator in writing that it no longer needs to comply with those requirements as of the date of demonstration. All other interim status duties are transferred effectively immediately upon the date of the change of ownership or operational control of the facility.

11.3.3.e. In no event shall changes be made to a hazardous waste management facility during interim status which amount to reconstruction of the facility. Reconstruction occurs when the capital investment in the changes to the facility exceeds fifty percent (50%) of the capital cost of a comparable entirely new hazardous waste management facility.

11.3.3.f. Changes under Section 11.3.3 of these regulations do not include changes made solely for the purpose of complying with requirements of Section 8.8.4 of these regulations for tanks and ancillary equipment.

11.3.4. Interim Status Standards.

During interim status, owners or operators shall comply with the interim status standards at 40 C.F.R. Part 265 as of the date specified in ~~Section 4-6~~ Section 1.5 of these regulations.

11.3.5. Grounds for Termination of Interim Status.

Interim status terminates when final disposition of a permit application is made or when interim status is terminated by the chief. Interim status may be terminated for:

~~44-3-5-4-~~ 11.3.5.a. Failure to furnish requested Part B application on time, or to furnish in full the information required by the Part B application; or

~~44-3-5-2-~~ 11.3.5.b. A determination is made by the chief that the facility poses a substantial risk of a health hazard or a significant risk of an adverse effect upon the environment.

~~44-3-5-3-~~ 11.3.5.c. A determination is made that the facility has failed to comply with the requirements of Section 10 of the State Act and the corresponding federal requirements at 40 C.F.R. Part 265 and 40 C.F.R. §270.73.

11.4. Contents of Part A.

11.4.1. Part A of the application shall include the following information:

~~44-4-a-~~ 11.4.1.a. The activities conducted by the applicant which require it to obtain a hazardous waste management permit.

- ~~44-4-b-~~ 11.4.1.b. Name, mailing address, and location of the facility for which the application is submitted.
- ~~44-4-e-~~ 11.4.1.c. Up to four (4) SIC codes which best reflect the principal products or services provided by the facility.
- ~~44-4-d-~~ 11.4.1.d. The latitude and longitude of the facility.
- ~~44-4-e-~~ 11.4.1.e. The name, address, and telephone number of the owner of the facility.
- ~~44-4-f-~~ 11.4.1.f. An indication of whether the facility is new or existing and whether it is a first or revised application.
- ~~44-4-g-~~ 11.4.1.g. For existing facilities, a scale drawing of the facility showing the location of all past, present, and future treatment, storage and disposal areas.
- ~~44-4-h-~~ 11.4.1.h. For existing facilities, photographs of the facility clearly delineating all existing structures; existing treatment, storage, and disposal areas; and site of future treatment, storage, and disposal areas.
- ~~44-4-i-~~ 11.4.1.i. The operator's name, address, telephone number, ownership status, and status as federal, State, private, public, or other entity.
- ~~44-4-j-~~ 11.4.1.j. A listing of all permits or construction approvals received or applied for under any of the following programs and their counterpart programs administered by the State, where appropriate:
- ~~44-4-j-1-~~ 11.4.1.j.1. Hazardous waste management program under RCRA;
- ~~44-4-j-2-~~ 11.4.1.j.2. UIC program under SDWA;
- ~~44-4-j-3-~~ 11.4.1.j.3. NPDES program under the Clean Water Act;
- ~~44-4-j-4-~~ 11.4.1.j.4. Prevention of significant deterioration (PSD) program under the Clean Air Act;
- ~~44-4-j-5-~~ 11.4.1.j.5. Nonattainment program under the Clean Air Act;
- ~~44-4-j-6-~~ 11.4.1.j.6. National emission standards for hazardous pollutants (NESHAPS) pre-construction approval under the Clean Air Act;
- ~~44-4-j-7-~~ 11.4.1.j.7. Ocean dumping permits under the Marine Protection, Research and Sanctuaries Act;
- ~~44-4-j-8-~~ 11.4.1.j.8. Dredge or fill permits under Section 404 of CWA; and
- ~~44-4-j-9-~~ 11.4.1.j.9. Other relevant environmental permits including local permits.
- ~~44-4-k-~~ 11.4.1.k. A topographic map (or other map if a topographic map is unavailable) extending at least 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 in the map area.

~~44-4.1-~~ 11.4.1.1. A brief description of the nature of the business.

~~44-4.m-~~ 11.4.1.m. A description of the processes to be used for treating, storing, and disposing of hazardous waste and the design capacity of these items.

~~44-4.n-~~ 11.4.1.n. A specification of the hazardous wastes listed or designated under Section 3 of these regulations to be treated, stored, or disposed at the facility; an estimate of the quantity of such wastes to be treated, stored, or disposed annually; and a general description of the processes to be used for such wastes.

~~44-4.o-~~ 11.4.1.o. The filing of a completed copy of an EPA Part A application with the chief shall constitute compliance with Section 11.4 of these regulations.

11.5. Contents of Part B.

11.5.1. General Information Requirements.

Part B of the permit application consists of the general information requirements of this Section and the specific information requirements of Section 11.5.2 of these regulations. Certain technical data, such as drawings and specifications, and engineering studies shall be certified by a registered professional engineer. The following information is required to be submitted with Part B of the application for all facilities:

11.5.1.a. A general description of the facility.

11.5.1.b. Chemical and physical analyses of the hazardous wastes 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 Section 8 of these regulations.

11.5.1.c. A copy of the waste analysis plan required by Section 8.2.4.b of these regulations and, if applicable, Section 8.2.4.c of these regulations.

11.5.1.d. A description of the security procedures and equipment required by Section 8.2.5 of these regulations or a justification demonstrating the reasons for requesting a waiver of this requirement.

11.5.1.e. A copy of the general inspection schedule required by Section 8.2.6.b of these regulations. Include, where applicable, as part of the inspection schedule, specific requirements in Sections 8.7.6, 8.8.4, 8.8.6, 8.9.5, 8.10.5, 8.11.3, and 8.12.4 of these regulations.

11.5.1.f. A justification of any request for a waiver(s) of the preparedness and prevention requirements of Section 8.3 of these regulations.

11.5.1.g. A copy of the contingency plan required by Section 8.4 of these regulations.

Note: Include where applicable, as part of the contingency plan, the specific requirements in Sections 8.9.6 and 8.10.6 of these regulations.

11.5.1.h. A description of procedures, structures, or equipment used at the facility to:

11.5.1.h.1. Prevent hazards in unloading operations (e.g., ramps or special forklifts);

11.5.1.h.2. Prevent runoff from hazardous waste handling areas to other areas of the facility or environment, or to prevent flooding (e.g., berms, dikes, or trenches);

11.5.1.h.3. Prevent contamination of water supplies;

11.5.1.h.4. Mitigate effects of equipment failure and power outages; and

11.5.1.h.5. Prevent undue exposure of personnel to hazardous waste (e.g., protective clothing).

11.5.1.i. A description of precautions to prevent accidental ignition or reaction of ignitable, reactive, or incompatible wastes as required to demonstrate compliance with Section 8.2.8 of these regulations including documentation demonstrating compliance with Section 8.2.8.c of these regulations.

11.5.1.j. Traffic pattern, estimated volume (i.e., number and types of vehicles), and control (e.g., show turns across traffic lanes and stacking lanes, describe access road surfacing and load bearing capacity, and show traffic control signals).

11.5.1.k. (Reserved).

11.5.1.l. Facility Location Information. Applicants must submit documentation demonstrating that the proposed siting of a new facility is not restricted by the location standards of Section 12 of these regulations. The demonstrations may be made using either published geologic data or data obtained from field investigations carried out by the applicant. The submitted information must include the source of data for such determinations, including copies of any maps, reports, results of surface or subsurface investigations, and calculations where applicable.

~~44-54-1-1-1~~ 11.5.1.l.1. Seismic Considerations. The information submitted must show that either:

~~44-54-1-1-1-A~~ 11.5.1.l.1.A. 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 three thousand (3,000) feet of a facility are present, based on data from:

11.5.1.l.1.A.i. U.S. Geological Service (USGS) publications;

~~44-5-4-1-4-A-2~~ 11.5.1.1.1.A.ii. Aerial reconnaissance of the area within a five-mile radius from the facility (available from the USGS);

~~44-5-4-1-4-A-3~~ 11.5.1.1.1.A.iii. An analysis of aerial photographs covering a three thousand (3,000) foot radius of the facility; and

~~44-5-4-1-4-A-4~~ 11.5.1.1.1.A.iv. If needed to clarify the above data, are reconnaissance based on walking portions of the area within three thousand (3,000) feet of the facility; or

11.5.1.1.1.B. If faults (to include lineations) which have had displacement in Holocene time are present within three thousand (3,000) feet of a facility, no faults pass within two hundred (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 two hundred (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 two hundred (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 three thousand (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 any faults found.

~~44-5-4-1-ii~~ 11.5.1.1.2. Karst Terrain. The demonstration must show that no solution cavities underlie or may influence the site by subsidence. Sources of information include:

~~44-5-4-1-ii-A~~ 11.5.1.1.2.A. Fracture trend maps and karst subsidence maps from the U.S. Geological Survey and the West Virginia Geological Survey.

~~44-5-4-1-ii-B~~ 11.5.1.1.2.B. Test borings to determine the stability of the overburden.

~~44-5-4-1-iii~~ 11.5.1.1.3. Subsurface Mining Areas. The information submitted must show that the site is not located within one thousand (1,000) feet of the area likely to be influenced by subsidence, as determined by the angle of draw. Calculations must be included in the demonstration where applicable. Sources of information include:

~~44-5-4-1-iii-A~~ 11.5.1.1.3.A. Maps and reports from the West Virginia Department of Mines Energy.

~~44-5-4-1-iii-B~~ 11.5.1.1.3.B. Maps from the U.S. Bureau of Mines.

~~44-5-4-1-iii-C~~ 11.5.1.1.3.C. Maps from the West Virginia Geological and Economic Survey.

~~44-5-4-1-iv~~ 11.5.1.1.4. Critical Recharge. The information submitted must show that the site is not located in an area which serves to recharge a public groundwater supply that serves more than fifteen (15) connections or twenty five (25) residents on a permanent year-round

basis. Sources of information include:

~~44-5-4-1-iv-A-~~ 11.5.1.1.4.A. U.S. Geological Survey maps.

~~44-5-4-1-iv-B--West---Virginia----Division----of----Water----Resourees-~~
11.5.1.1.4.B. West Virginia Department of Natural Resources, Division of Water Resources.

~~44-5-4-1-iv-C-~~ 11.5.1.1.4.C. West Virginia Department of Health.

~~44-5-4-1-v-~~ 11.5.1.1.5. Wetlands. The demonstration must show that the site is not located in a wetland or in areas that may have an impact on wetlands. Sources of information include:

~~44-5-4-1-v-A-~~ 11.5.1.1.5.A. U.S. Geological Survey maps.

~~44-5-4-1-v-B--West-Virginia--Division--of--Wildlife-~~ 11.5.1.1.5.B. West Virginia Department of Natural Resources, Division of Wildlife Resources.

~~44-5-4-1-vi-~~ 11.5.1.1.6. Dam-Related Flood Hazard Areas. The demonstration must show that the site is not located in the "danger reach" of a dam not permitted by the state or within the floodpool area of any dam. Sources of information include:

~~44-5-4-1-vi-A-~~ 11.5.1.1.6.A. Reports from the U.S. Army Corps of Engineers.

~~44-5-4-1-vi-B-~~ 11.5.1.1.6.B. U.S. Geological Survey Maps.

~~44-5-4-1-vi-C--West----Virginia----Division----of----Reelamation-~~
11.5.1.1.6.C. West Virginia Department of Energy.

~~44-5-4-1-vii-~~ 11.5.1.1.7. Floodplains. The 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 a 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.

~~44-5-4-1-viii-~~ 11.5.1.1.8. Owners and operators of facilities located in the 100-year floodplain must provide the following information:

~~44-5-4-1-viii-A-~~ 11.5.1.1.8.A. Engineering analysis to indicate the various hydrodynamic and hydrostatic forces expected to result at the site as a consequence of a 100-year flood.

~~44-5-4-1-viii-B-~~ 11.5.1.1.8.B. Structural or other engineering studies showing the design of operational units (e.g., tanks or incinerators) and flood protection devices (e.g., floodwalls or dikes) at the facility and how these will prevent washout.

~~44-5-4-1-viii-C-~~ 11.5.1.1.8.C. If applicable, and in lieu of Sections ~~44-5-4-1-viii-A--and--44-5-4-1-viii-B~~ Sections 11.5.1.1.8.A and 11.5.1.1.8.B of these regulations, a detailed description of procedures to be followed to remove hazardous waste to safety before the facility is flooded, including:

~~44-5-4-1-viii-C-1-~~ 11.5.1.1.8.C.i. Timing of such movement relative to flood levels, including estimated time to move the waste, to show that such movement can be completed.

~~44-5-4-1-viii-C-2-~~ 11.5.1.1.8.C.ii. 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 Sections 8 and 11 of these regulations.

~~44-5-4-1-viii-C-3-~~ 11.5.1.1.8.C.iii. The planned procedures, equipment, and personnel to be used and the means to ensure that such resources will be available in time for use.

~~44-5-4-1-viii-C-4-~~ 11.5.1.1.8.C.iv. The potential for accidental discharges of the waste during movement.

~~44-5-4-1-ix-~~ 11.5.1.1.9. Existing facilities not in compliance with Section 12.1.7 of these regulations shall provide a plan showing how the facility will be brought into compliance and a schedule for compliance.

11.5.1.m. An outline of both the introductory and continuing training programs by owners or operators to prepare persons to operate or maintain the hazardous waste management facility in a safe manner as required to demonstrate compliance with Section 8.2.7 of these regulations. A brief description of how training will be designed to meet actual job tasks in accordance with requirements in Section 8.2.7.a.3 of these regulations.

~~44-5-4-nr-A-copy-of-the-closure-plan-and,--where-applicable,--the--post-closure-plan-required-by-Sections-8.6.3-and-8.6.8-of-these-regulations. Include--where--applicable,--as-part-of-the-plans,--specific-requirements in-Sections-8.7.10,--8.8.8,--8.9.7,--8.10.9,--8.11.11,--and-8.12.11-of-these-regulations.~~

11.5.1.n. A copy of the closure plan and, where applicable, the post-closure plan required by Sections 8.6.3, 8.6.8, and 8.8.8 of these regulations. Include, where applicable, as part of the plans, specific requirements in Sections 8.7.10, 8.8.8, 8.9.7, 8.10.9, 8.11.11, and

8.12.11 of these regulations and in West Virginia Administrative Regulations, Air Pollution Control Commission, Series 25, Section 24.01.

11.5.1.o. For existing facilities, documentation that a notice has been placed in the deed or appropriate alternate instrument as required by Section 15.1 of these regulations. For hazardous waste disposal units that have been closed, documentation that a notice has been placed in the deed or appropriate alternate instrument as required by Sections 15.1 and 15.4 of these regulations.

11.5.1.p. The most recent closure cost estimate for the facility prepared in accordance with Section 13 of these regulations plus a copy of the financial assurance mechanism adopted in compliance with Section 13 of these regulations. For a new facility, a copy of the required documentation may be submitted sixty (60) days prior to the initial receipt of hazardous wastes, if that is later than the submission of Part B.

11.5.1.q. Where applicable, the most recent post-closure cost estimates for the facility prepared in accordance with Section 13 of these regulations plus a copy of the financial assurance mechanism adopted in compliance with Section 13 of these regulations. For a new facility a copy of the required documentation may be submitted sixty (60) days prior to the initial receipt of hazardous wastes, if that is later than the submission of Part B.

11.5.1.r. Where applicable, a copy of the insurance policy or other documentation which comprises compliance with the requirements of Section 13 of these regulations. For a new facility, documentation showing the amount of insurance meeting the specifications of Section 13 of these regulations 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 Section 13 of these regulations.

11.5.1.s. (Reserved).

11.5.1.t. A topographic map showing a distance of one thousand (1,000) 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 hazardous waste facilities located in mountainous areas should use larger contour intervals to adequately show topographic profiles of facilities. The map shall clearly show the following:

~~44-5-4-6-i-~~ 11.5.1.t.1. Map scale and date.

~~44-5-4-6-ii-~~ 11.5.1.t.2. 100-year floodplain area.

~~44-5-4-6-iii-~~ 11.5.1.t.3. Surface waters including intermittent

streams.

~~44.5.4.5.iv~~ 11.5.1.t.4. Surrounding land uses (e.g., residential, commercial, agricultural, recreational).

~~44.5.4.5.v~~ 11.5.1.t.5. A wind rose (i.e., prevailing wind speed and direction).

~~44.5.4.5.vi~~ 11.5.1.t.6. Orientation of the map (north arrow).

~~44.5.4.5.vii~~ 11.5.1.t.7. Legal boundaries of the hazardous waste management facility site.

~~44.5.4.5.viii~~ 11.5.1.t.8. Access control (e.g., fences, gates).

~~44.5.4.5.ix~~ 11.5.1.t.9. Injection and withdrawal wells both on-site and off-site.

~~44.5.4.5.x~~ 11.5.1.t.10. Buildings, treatment, storage, or disposal operations or other structures (e.g., recreation areas; runoff control systems; access and internal roads; storm, sanitary, and process sewerage systems; loading and unloading areas; and fire control facilities).

~~44.5.4.5.xi~~ 11.5.1.t.11. Barriers for drainage or flood control.

~~44.5.4.5.xii~~ 11.5.1.t.12. Location of operational units within the hazardous waste management facility site, where hazardous waste is or will be treated, stored, or disposed (include equipment clean-up areas).

11.5.1.u. Where appropriate, proof of coverage by a financial mechanism in compliance with Section 13 of these regulations.

11.5.2. Specific Information Requirements.

~~The following additional information is required from owners or operators of specific types of hazardous waste management facilities that are used or to be used for storage or treatment:~~

~~44.5.2.a. For facilities that store containers of hazardous waste, except as otherwise provided in Section 8.7.1 of these regulations:~~

11.5.2.a. Except as otherwise provided in Section 8.7.1 of these regulations, the following additional information is required from owners or operators of facilities that store containers of hazardous waste:

11.5.2.a.1. A description of the containment system to demonstrate compliance with Section 8.7.7 of these regulations. Show at least the following:

~~44.5.2.a.1.i~~ 11.5.2.a.1.A. Basic design parameters, dimensions, and materials of construction.

~~44.5.2.a.1.ii~~ 11.5.2.a.1.B. How the design promotes drainage or how containers are kept from contact with standing liquids in the

containment system.

~~11.5.2.a.1.iii~~ 11.5.2.a.1.C. Capacity of the containment system relative to the number and volume of containers to be stored.

~~11.5.2.a.1.iv~~ 11.5.2.a.1.D. Provisions for preventing or managing run-on.

~~11.5.2.a.1.v~~ 11.5.2.a.1.E. How accumulated liquids can be analyzed and removed to prevent overflow.

11.5.2.a.2. For storage areas that store containers holding hazardous wastes that do not contain free liquids, a demonstration of compliance with Section 8.7.7.c of these regulations, including:

~~11.5.2.a.2.i~~ 11.5.2.a.2.A. Test procedures and results or other documentation or information to show that the wastes do not contain free liquids provided such test procedures, results and other documentation or information simulate in-situ waste management conditions and demonstrate the irreversibility of the liquid to solid phase of the waste during the time the waste is managed in the containers, based at least on in-situ temperature and pressure conditions, possible chemical and biological reactions, and the partition coefficients of the specific sorbant matrix with that of the particular waste; and

~~11.5.2.a.2.ii~~ 11.5.2.a.2.B. A description of how the storage area is designed or operated to drain and remove liquids and how containers are kept from contact with standing liquids.

11.5.2.a.3. Sketches, drawings, or data demonstrating compliance with Section 8.7.8 of these regulations (location or buffer zone and containers holding ignitable or reactive wastes) and Section 8.7.9.c of these regulations (location of incompatible wastes), where applicable.

11.5.2.a.4. Where incompatible wastes are stored or otherwise managed in containers, a description of the procedures used to ensure compliance with Sections 8.7.9.a, 8.7.9.b, 8.2.8.b, and 8.2.8.c of these regulations.

~~11.5.2.b. For facilities that use tanks to store or treat hazardous waste, except as otherwise provided in Section 8.8.1 of these regulations, description of design and operation procedures which demonstrate compliance with all applicable requirements of Section 8 of these regulations, including:~~

~~11.5.2.b.1. References to design standards or other available information used or to be used in design and construction of the tank.~~

~~11.5.2.b.2. A description of design specifications including identification of construction materials and lining materials (include pertinent characteristics such as corrosion or erosion resistance).~~

~~11.5.2.b.3. Tank dimensions, capacity, and shell thickness.~~

~~11.5.2.b.4. A diagram of piping, instrumentation, and process flow.~~

11.5.2.b.5. Description of feed systems, safety cutoff, bypass systems, and pressure controls (e.g., vents);

11.5.2.b.6. Description of procedures for handling incompatible, ignitable, or reactive wastes, including the use of buffer zone.

11.5.2.b. Except as otherwise provided in Section 8.8.1 of these regulations, the following additional information is required from owners or operators of facilities that use tanks to store or treat hazardous waste:

11.5.2.b.1. A written assessment that is reviewed and certified by an independent, qualified, registered professional engineer as to the structural integrity and suitability for handling hazardous waste of each tank system, as required under Sections 8.8.2 and 8.8.3 of these regulations;

11.5.2.b.2. Dimensions and capacity of each tank;

11.5.2.b.3. Description of feed systems, safety cutoff, bypass systems, and pressure controls (e.g., vents);

11.5.2.b.4. A diagram of piping, instrumentation, and process flow for each tank system;

11.5.2.b.5. A description of materials and equipment used to provide external corrosion protection, as required under Section 8.8.3.a.3.ii of these regulations;

11.5.2.b.6. For new tank systems, a detailed description of how the tank system(s) will be installed in compliance with Sections 8.8.3.b through 8.8.3.e of these regulations;

11.5.2.b.7. 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 Sections 8.8.4.a through 8.8.4.f of these regulations;

11.5.2.b.8. For tank systems for which a variance from the requirements of Section 8.8.4 of these regulations is sought (as provided by Section 8.8.4.g of these regulations):

11.5.2.b.8.A. 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

11.5.2.b.8.B. A detailed assessment of the substantial present or potential hazards posed to human health or the environment should a release enter the environment;

11.5.2.b.9. Description of controls and practices to prevent spills and overflows, as required under Section 8.8.5.b of these regulations; and

11.5.2.b.10. 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 Sections 8.8.9 and 8.8.10 of these regulations.

~~11.5.2.e. For facilities that store, treat, or dispose of hazardous waste in surface impoundments, except as otherwise provided in Section 8.9.4 of these regulations:~~

11.5.2.c. Except as otherwise provided in Section 8.1 of these regulations, the following additional information is required from owners or operators of facilities that treat, store, or dispose of hazardous waste in surface impoundments:

11.5.2.c.1. A list of the hazardous wastes placed or to be placed in each surface impoundment;

11.5.2.c.2. Detailed plans and an engineering report describing how the surface impoundment is or will be designed, constructed, operated, and maintained to meet the requirements of Sections 8.9.2 and 8.9.4 of these regulations. This submission must address the following items:

~~11.5.2.e.2.i.~~ 11.5.2.c.2.A. The liner system;

~~11.5.2.e.2.ii.~~ 11.5.2.c.2.B. Prevention of overtopping; and

~~11.5.2.e.2.iii.~~ 11.5.2.c.2.C. Structural integrity of dikes;

11.5.2.c.3. A description of how each surface impoundment, including the liner and cover systems and appurtenances for control of overtopping, will be inspected in order to meet the requirements of Section 8.9.5 of these regulations. This information should be included in the inspection plan and submitted under Section 11.5.1.e of these regulations;

11.5.2.c.4. A certification by a registered professional engineer which attests to the structural integrity of each dike, as required under Section 8.9.5 of these regulations. For new units, the owner or operator must submit a statement by a registered professional engineer that he will provide such a certification upon completion of construction in accordance with the plans and specifications;

11.5.2.c.5. A description of the procedure to be used for removing a surface impoundment from service, as required under Sections 8.9.6 and 11.5.2.c of these regulations. This information should be included in the contingency plan submitted under Section 11.5.1.g of these regulations;

11.5.2.c.6. A description of how hazardous waste residues and contaminated materials will be removed from the unit at closure, as required under Section 8.9.7 of these regulations. 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 Section 8.9.7 of these regulations will be complied with. This information should be included in the closure plan and, where applicable, the post-closure plan submitted under Section 11.5.1.n of these regulations;

11.5.2.c.7. If ignitable or reactive wastes are to be placed in a

surface impoundment, an explanation of how Section 8.9.8 of these regulations will be complied with; and

11.5.2.c.8. If incompatible wastes; or incompatible wastes and other materials, will be placed in a surface impoundment, an explanation of how Section 8.9.9 will be complied with.

~~11.5.2.d. For facilities that store or treat hazardous waste in waste piles, except as otherwise provided in Section 8.4 of these regulations:~~

11.5.2.d. Except as otherwise provided in Section 8.1 of these regulations, the following additional information is required from owners or operators of facilities that store or treat of hazardous waste in waste piles:

11.5.2.d.1. A list of hazardous wastes placed or to be placed in each waste pile;

11.5.2.d.2. If an exemption is sought to Sections 8.10.2, 8.10.3, 8.10.4, and 8.10.6 of these regulations pursuant to Section 8.10.1.c of these regulations, a demonstration must be made sufficient to show compliance with Sections 8.10.1.c.1 through 8.10.1.c.6 of these regulations.

11.5.2.d.3. Detailed plans and an engineering report describing how the pile is or will be designed, constructed, operated and maintained to meet the requirements of Section 8.10.2 of these regulations. This submission must address the following items:

~~11.5.2.d.3.i.~~ 11.5.2.d.3.A. The liner system;

~~11.5.2.d.3.ii.~~ 11.5.2.d.3.B. Control of run-on;

~~11.5.2.d.3.iii.~~ 11.5.2.d.3.C. Control of runoff;

~~11.5.2.d.3.iv.~~ 11.5.2.d.3.D. Management of collection and holding units associated with run-on and runoff control systems; and

~~11.5.2.d.3.v.~~ 11.5.2.d.3.E. Control of wind dispersal of particulate matter, where applicable.

11.5.2.d.4. A description of how each waste pile, including the liner and appurtenances for control of run-on and runoff, will be inspected in order to meet the requirements of Section 8.10.5 of these regulations. This information should be included in the inspection plan submitted under Section 11.5.1.e of these regulations.

11.5.2.d.5. 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.

11.5.2.d.6. If ignitable or reactive wastes are to be placed in a waste pile, an explanation of how the requirements of Section 8.10.7 of these regulations will be complied with.

11.5.2.d.7. If incompatible wastes, or incompatible wastes and other

materials, will be placed in a waste pile, an explanation of how Section 8.10.8 of these regulations will be complied with.

11.5.2.d.8. A description of how hazardous waste residues and contaminated materials will be removed from the waste pile at closure, as required under Section 8.6 of these regulations.

~~44.5.2.e. For facilities that use land treatment to dispose of hazardous waste, except as otherwise provided in Section 8.1 of these regulations:~~

11.5.2.e. Except as otherwise provided in Section 8.1 of these regulations, the following additional information is required from owners or operators of facilities that use land treatment to dispose of hazardous waste:

11.5.2.e.1. A description of plans to conduct a treatment demonstration as required under Section 8.12.3 of these regulations. The description must include the following information:

~~44.5.2.e.1.i.~~ 11.5.2.e.1.A. The wastes for which the demonstration will be made and the potential hazardous constituents in the wastes;

~~44.5.2.e.1.ii.~~ 11.5.2.e.1.B. The data sources to be used to make the demonstration (e.g., literature, laboratory data, field data, or operating data);

~~44.5.2.e.1.iii.~~ 11.5.2.e.1.C. Any specific laboratory or field test that will be conducted, including:

~~44.5.2.e.1.iii.A.~~ 11.5.2.e.1.C.i. The type of test (e.g., column leaching or degradation);

~~44.5.2.e.1.iii.B.~~ 11.5.2.e.1.C.ii. Materials and methods, including analytical procedures;

~~44.5.2.e.1.iii.C.~~ 11.5.2.e.1.C.iii. Expected time for completion; and

~~44.5.2.e.1.iii.D.~~ 11.5.2.e.1.C.iv. Characteristics of the unit that will be simulated in the demonstration, including treatment zone characteristics, climatic conditions, and operating practices;

11.5.2.e.2. A description of a land treatment program, as required under Section 8.12.3 of these regulations. 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:

~~44.5.2.e.2.i.~~ 11.5.2.e.2.A. The wastes to be land treated;

~~44.5.2.e.2.ii.~~ 11.5.2.e.2.B. Design measures and operating practices necessary to maximize treatment in accordance with Section 8.12.4 of these regulations including:

~~44.5.2.e.2.ii.A.~~ 11.5.2.e.2.B.i. Waste application method and rate;

~~44.5.2.e.2.ii.B.~~ 11.5.2.e.2.B.ii. Measures to control soil pH;

- ~~44.5.2.e.2.ii.6.~~ 11.5.2.e.2.B.iii. Enhancement of microbial or chemical reactions;
- ~~44.5.2.e.2.ii.9.~~ 11.5.2.e.2.B.iv. Control of moisture content;
- ~~44.5.2.e.2.iii.~~ 11.5.2.e.2.C. Provisions for unsaturated zone monitoring, including:
- ~~44.5.2.e.2.iii.A.~~ 11.5.2.e.2.C.i. Sampling equipment, procedures, and frequency;
- ~~44.5.2.e.2.iii.B.~~ 11.5.2.e.2.C.ii. Procedures for selecting sampling locations;
- ~~44.5.2.e.2.iii.6.~~ 11.5.2.e.2.C.iii. Analytical procedures;
- ~~44.5.2.e.2.iii.D.~~ 11.5.2.e.2.C.iv. Chain of custody control;
- ~~44.5.2.e.2.iii.E.~~ 11.5.2.e.2.C.v. Procedures for establishing background values;
- ~~44.5.2.e.2.iii.F.~~ 11.5.2.e.2.C.vi. Statistical methods for interpreting results; and
- ~~44.5.2.e.2.iii.G.~~ 11.5.2.e.2.C.vii. The justification for any hazardous constituents, in accordance with the criteria for such selection in Section 8.12.9 of these regulations;
- ~~44.5.2.e.2.iv.~~ 11.5.2.e.2.D. 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 Section 8.2.4 of these regulations; and
- ~~44.5.2.e.2.v.~~ 11.5.2.e.2.E. The proposed dimensions of the treatment zone;
- 11.5.2.e.3. A description of how the unit is or will be designed, constructed, operated, and maintained in order to meet the requirements of Section 8.12.4 of these regulations. This submission must address the following items:
- ~~44.5.2.e.3.i.~~ 11.5.2.e.3.A. Control of run-on;
- ~~44.5.2.e.3.ii.~~ 11.5.2.e.3.B. Collection and control of runoff;
- ~~44.5.2.e.3.iii.~~ 11.5.2.e.3.C. Minimization of runoff of hazardous constituents from the treatment zone;
- ~~44.5.2.e.3.iv.~~ 11.5.2.e.3.D. Management of collection and holding facilities associated with run-on and runoff control systems;
- ~~44.5.2.e.3.v.~~ 11.5.2.e.3.E. Periodic inspection of the unit. This information should be included in the inspection plan submitted under Section 11.5.1.e of these regulations; and
- ~~44.5.2.e.3.vi.~~ 11.5.2.e.3.F. Control of wind dispersal of particulate matter, if applicable;

11.5.2.e.4. 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 Section 8.12.7.a of these regulations will be conducted including:

~~11.5.2.e.4.i.~~ 11.5.2.e.4.A. Characteristics of the food chain crop for which the demonstration will be made;

~~11.5.2.e.4.ii.~~ 11.5.2.e.4.B. Characteristics of the waste, treatment zone, and waste application method and rate to be used in the demonstration;

~~11.5.2.e.4.iii.~~ 11.5.2.e.4.C. Procedures for crop growth, sample collection, sample analysis, and data evaluation; and

~~11.5.2.e.4.iv.~~ 11.5.2.e.4.D. Characteristics of the comparison crop including the location and conditions under which it was or will be grown;

11.5.2.e.5. If food chain crops are to be grown, and cadmium is present in the land-treated waste, a description of how the requirements of Section 8.12.7 of these regulations will be complied with;

11.5.2.e.6. 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 Section 8.12.11 of these regulations. This information should be included in the closure plan and, where applicable, the post-closure care plan submitted under Section 11.5.1.n of these regulations;

11.5.2.e.7. If ignitable or reactive wastes will be placed in or on the treatment zone, an explanation of how the requirements of Section 8.12.12 of these regulations will be complied with; and

11.5.2.e.8. If incompatible wastes, or incompatible wastes and other materials, will be placed in or on the same treatment zone, an explanation of how Section 8.12.13 of these regulations will be complied with.

~~11.5.2.f. For facilities that dispose of hazardous waste in landfills, except as otherwise provided in Section 8.1 of these regulations:~~

11.5.2.f. Except as otherwise provided in Section 8.1 of these regulations, the following additional information is required from owners or operators of facilities that dispose of hazardous waste in landfills:

11.5.2.f.1. A list of the hazardous wastes placed in each landfill or landfill cell;

11.5.2.f.2. Detailed plans and an engineering report describing how the landfill is or will be designed, constructed, operated, and maintained to comply with the requirements of Section 8.11.2 of these regulations. This submission must address the following items as specified in Section 8.11.2 of these regulations:

~~11.5.2.f.2.i.~~ 11.5.2.f.2.A. The liner system and leachate collection

and removal system;

~~44.5.2.f.2.ii~~ 11.5.2.f.2.B. Control of run-on;

~~44.5.2.f.2.iii~~ 11.5.2.f.2.C. Control of runoff;

~~44.5.2.f.2.iv~~ 11.5.2.f.2.D. Management of collection and holding facilities associated with run-on and runoff control systems; and

~~44.5.2.f.2.v~~ 11.5.2.f.2.E. Control of wind dispersal of particulate matter, where applicable.

11.5.2.f.3. A description of how each landfill, including the liner and cover systems, will be inspected in order to meet the requirements of Section 8.11.3 of these regulations. This information should be included in the inspection plan submitted under Section 11.5.1.e of these regulations;

11.5.2.f.4. 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 Section 8.11.11 of these regulations, and a description of how each landfill will be maintained and monitored after closure in accordance with Section 8.11.11 of these regulations. This information should be included in the closure and post-closure plans submitted under Section 11.5.1.n of these regulations;

11.5.2.f.5. If ignitable or reactive wastes will be landfilled, an explanation of how the requirements of Section 8.11.13 of these regulations will be complied with;

11.5.2.f.6. If incompatible wastes, or incompatible wastes and other materials, will be landfilled, an explanation of how Section 8.11.14 of these regulations will be complied with;

11.5.2.f.7. If bulk or noncontainerized liquid waste or waste containing free liquids is to be landfilled, an explanation of how the requirements of Section 8.11.15 of these regulations will be complied with; and

11.5.2.f.8. If containers of hazardous waste are to be landfilled, an explanation of how the requirements of Section 8.11.16 or 8.11.17 of these regulations, as applicable, will be complied with.

11.5.2.g. Except as provided in Section 8.13.1.b of these regulations, the following additional information regarding protection of groundwater is required from owners or operators of hazardous waste surface impoundments, piles, land treatment units, and landfills: ~~except as otherwise provided in Section 8.13.1.g of these regulations:~~

11.5.2.g.1. A summary of the groundwater monitoring data obtained during the interim status period under 40 C.F.R. §§265.90 through 265.94, were applicable;

11.5.2.g.2. Identification of the uppermost aquifer and aquifers hydraulically interconnected beneath the facility property, including groundwater flow direction and rate, and the basis for such identification (i.e., the information obtained from hydrogeologic

investigations of the facility area). This information should include the following:

44-5-2-g-2-i- 11.5.2.g.2.A. Characterization of the site hydrogeology;

44-5-2-g-2-i-A- 11.5.2.g.2.A.i. Copies of any available geophysical logs of the site (e.g., spontaneous potential, resistivity, gamma ray);

44-5-2-g-2-i-B- 11.5.2.g.2.A.ii. Depth to the top of each water-bearing formation;

44-5-2-g-2-i-C- 11.5.2.g.2.A.iii. Depth to the bottom of each water-bearing formation;

44-5-2-g-2-i-D- 11.5.2.g.2.A.iv. Areas of recharge and discharge for the uppermost aquifer;

44-5-2-g-2-i-E- 11.5.2.g.2.A.v. Water level depth information (i.e., a water table map);

44-5-2-g-2-i-F- 11.5.2.g.2.A.vi. Depth to and type of bedrock present;

44-5-2-g-2-i-G- 11.5.2.g.2.A.vii. Information available on the three dimensional flow of the site (including horizontal and vertical flow rates and directions); and

44-5-2-g-2-i-H- 11.5.2.g.2.A.viii. Any additional information deemed necessary by the chief;

44-5-2-g-2-ii- 11.5.2.g.2.B. Characterization of each soil horizon underlying the hazardous waste management area:

44-5-2-g-2-ii-A- 11.5.2.g.2.B.i. pH;

44-5-2-g-2-ii-B- 11.5.2.g.2.B.ii. Cation exchange capacity;

44-5-2-g-2-ii-C- 11.5.2.g.2.B.iii. Particle size ratio and textural classification;

44-5-2-g-2-ii-D- 11.5.2.g.2.B.iv. Bulk density;

44-5-2-g-2-ii-E- 11.5.2.g.2.B.v. Percent voids present;

44-5-2-g-2-ii-F- 11.5.2.g.2.B.vi. Permeability;

44-5-2-g-2-ii-G- 11.5.2.g.2.B.vii. Infiltration rate; and

44-5-2-g-2-ii-H- 11.5.2.g.2.B.viii. Any other information deemed necessary by the chief;

11.5.2.g.3. On the topographic map required under Section 11.5.1.t of these regulations, a delineation of the waste management area, the property boundary, the proposed "point of compliance" as defined under Section 8.13.5 of these regulations, the proposed location of groundwater monitoring wells as required under Section 8.13.7 of these regulations and, to the extent possible, the information required in Section 11.5.2.g.2 of these regulations;

11.5.2.g.4. A description of any plume of contamination that has entered the groundwater from a regulated unit at the time that the application is submitted that:

~~11.5.2.g.4.i.~~ 11.5.2.g.4.A. Delineates the extent of the plume on the topographic map required under Section 11.5.1.t of these regulations; and

~~11.5.2.g.4.ii.~~ 11.5.2.g.4.B. Identifies the concentration of each Appendix VIII constituent in the plume;

11.5.2.g.5. Detailed plans and an engineering report describing the proposed groundwater monitoring program to be implemented to meet the requirements of Section 8.13.7 of these regulations, including such information as proposed purging methods or proposed development of wells;

11.5.2.g.6. The owner or operator must also submit an engineering feasibility plan for a corrective action program necessary to meet the requirements of Section 8.13.9 of these regulations;

11.5.2.g.7. The owner or operator must submit sufficient information, supporting data, and analyses to establish a groundwater monitoring program which meets the requirements of Section 8.13.8 of these regulations. This submission must address the following items as specified under Section 8.13.8:

~~11.5.2.g.7.i.~~ 11.5.2.g.7.A. 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 groundwater;

~~11.5.2.g.7.ii.~~ 11.5.2.g.7.B. A proposed groundwater monitoring system;

~~11.5.2.g.7.iii.~~ 11.5.2.g.7.C. Background concentrations of each proposed monitoring parameter or hazardous constituent, or procedures to calculate such concentrations; and

~~11.5.2.g.7.iv.~~ 11.5.2.g.7.D. A description of proposed sampling, analysis and statistical comparison procedures to be utilized in evaluating groundwater monitoring data; and

11.5.2.g.8. If hazardous constituents have been measured in the groundwater at the point of compliance at concentrations which are determined to be significantly increased over background concentrations under Section 8.13.8.d of these regulations, the owner or operator must submit sufficient information, supporting data, and analyses to establish a corrective action program which meets the requirements of Section 8.13.9 of these regulations. To demonstrate compliance with Section 8.13.9 of these regulations, the owner or operator must address the following items (in addition to other Section 8.13.9 requirements):

~~11.5.2.g.8.i.~~ 11.5.2.g.8.A. A characterization of the contaminated groundwater, including concentrations of hazardous constituents;

~~11.5.2.g.8.ii.~~ 11.5.2.g.8.B. The background concentration for each hazardous constituent found in the groundwater as set forth in Section

8.13.8.b of these regulations;

~~44-5-2-g-8-iii-~~ 11.5.2.g.8.C. Detailed plans and an engineering report describing the corrective action to be taken;

~~44-5-2-g-8-iv-~~ 11.5.2.g.8.D. A description of how the groundwater monitoring program will assess the adequacy of the corrective action under Section 8.13.9.d of these regulations;

~~44-5-2-g-8-v-~~ 11.5.2.g.8.E. A proposed compliance schedule for beginning the corrective action; and

~~44-5-2-g-8-vi-~~ 11.5.2.g.8.F. A description of the wastes previously handled at the facility.

11.5.3. Environmental Analysis.

In addition to the information to be submitted with Part B of the application under Sections 11.5.2 and 11.5.3 of these regulations, major facilities not in existence on November 19, 1980, shall submit an environmental analysis which shall contain information of the type, quality and detail that will permit adequate consideration of the environmental, technical and economic factors involved in the establishment and operation of such facilities:

11.5.3.a. The portion of the applicant's environmental analysis dealing with environmental assessments shall contain, but not be limited to:

11.5.3.a.1. The potential impact of the method and route of transportation of hazardous waste to the site and the potential impact of the establishment and operation of such facilities on air and water quality, existing land use, transportation and natural resources in the area affected by such facilities;

11.5.3.a.2. A description of the expected effect of such facilities; and

11.5.3.a.3. Recommendations for minimizing any adverse impact.

11.5.3.b. The portion of the applicant's environmental analysis dealing with technical and economic assessments shall contain, but not be limited to:

11.5.3.b.1. Detailed descriptions of the proposed site and facility, including site location and boundaries and facility purpose, type, size, capacity, and location on the site and estimates of the cost and charges to be made for material accepted, if any;

11.5.3.b.2. Provisions for managing the site following cessation of operation of the facility; and

11.5.3.b.3. Qualifications of owner and operation, including a description of applicant's prior experience in hazardous waste management operations.

11.5.4. Additional Information.

In addition to the information required in Sections 11.5.1 through 11.5.3 of these regulations, the chief may request that the applicant submit such other information as may be necessary for the chief to carry out his duties under the State Act.

11.6. Record Keeping.

Applicants shall keep records of all data used to complete permit applications and any supplemental information submitted for a period of three (3) years from the date the application is signed.

11.7. Signatories to Permit Applications and Reports.

11.7.1. Applications.

All permit applications shall be signed as follows:

11.7.1.a. For a corporation: by a responsible corporate officer. For the purpose of ~~this section~~ Section 11.7 of these regulations, a "responsible corporate officer" means:

11.7.1.a.1. 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

11.7.1.a.2. The manager of one or more manufacturing, production or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. NOTE: The director does not require specific assignments or delegations of authority to responsible corporate officers identified in Section 11.7.1.a.1. The director will presume that these responsible corporate officers have the requisite authority to sign permit applications unless the corporation has notified the director to the contrary. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions under Section 11.7.1.a.2 rather than to specific individuals.

11.7.1.b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

11.7.1.c. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of ~~this section~~ Section 11.7 of these regulations, a principal executive officer of a federal agency includes:

11.7.1.c.1. The chief executive officer of the agency; or

11.7.1.c.2. A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

11.7.2. Reports.

All reports required by permits and other information requested by the

chief shall be signed by a person described in Section 11.7.1 of these regulations above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

11.7.2.a. The authorization is made in writing by a person described in Section 11.7.1 of these regulations;

11.7.2.b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or an individual or a position having responsibility for the facility's compliance with environmental laws and permits; and

11.7.2.c. The written authorization is submitted to the chief.

11.7.3. Changes to Authorization.

If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility or because a new individual or position has responsibility for the facility's compliance with environmental laws and permits, a new authorization satisfying the requirements shall be submitted to the chief prior to or together with any reports, information, or applications to be signed by an authorized representative.

11.7.4. Certification.

Any person signing a document under Section 11.7.1 or Section 11.7.2 of these regulations shall 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 with 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."

11.8. Permits by Rule.

Notwithstanding any other provisions of Section 11 of these regulations, the following shall be deemed to have a hazardous waste management permit if the conditions listed are met.

11.8.1. Publicly Owned Treatment Works.

A POTW which accepts for treatment hazardous wastes qualifies for a permit by rule if the owner or operator of the facility:

11.8.1.a. Has an NPDES permit and a State water pollution control permit.

11.8.1.b. Complies with the conditions of those permits.

11.8.1.c. Complies with the appropriate sections of these regulations

with respect to:

11.8.1.c.1. Identification number.

11.8.1.c.2. Use of manifest system.

11.8.1.c.3. Manifest discrepancies.

11.8.1.c.4. Operating record.

11.8.1.c.5. Annual report.

11.8.1.c.6. Unmanifested waste report.

11.8.1.d. 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.

11.8.2. (Reserved).

11.8.3. Injection Wells.

The owner or operator of an injection well disposing of hazardous waste, if the owner or operator:

11.8.3.a. Has a UIC permit for underground injection issued by the Water-Resources-Division West Virginia Department of Energy; and

11.8.3.b. Complies with the regulatory and permitting requirements established by the Office-of-Oil-and-Gas West Virginia Department of Energy and the Shallow Gas Well Review Board pursuant to the authority contained in the State Act.

11.9. Emergency Permits.

11.9.1. Notwithstanding any other provision of Section 11 of these regulations, in the event the chief finds an imminent and substantial endangerment to human health or the environment, the chief may issue a temporary emergency permit to a facility to allow treatment, storage or disposal of hazardous waste at a non-permitted facility, or hazardous waste not covered by the permit for a facility with an effective permit. This emergency permit:

~~44-9-a-~~ 11.9.1.a. May be oral or written. If oral, it shall be followed within five (5) days by a written emergency permit.

~~44-9-b-~~ 11.9.1.b. Shall not exceed ninety (90) days in duration.

~~44-9-c-~~ 11.9.1.c. Shall clearly specify the hazardous wastes to be received, and the manner and location of their treatment, storage, or disposal.

~~44-9-d-~~ 11.9.1.d. May be terminated by the chief at any time without prior notice if it is determined that termination is appropriate to protect human health or the environment.

~~44-9-e-~~ 11.9.1.e. Shall be accompanied by a public notice as required

by these regulations including:

~~44.9.e.4~~ 11.9.1.e.1. Name and location of the permitted hazardous waste management facility.

~~44.9.e.2~~ 11.9.1.e.2. A brief description of the wastes involved.

~~44.9.e.3~~ 11.9.1.e.3. A brief description of the action authorized and reasons for authorizing.

~~44.9.e.4~~ 11.9.1.e.4. Duration of the emergency permit.

~~44.9.e.5~~ 11.9.1.e.5. Name and address of the office granting the emergency authorization.

~~44.9.f~~ 11.9.1.f. Shall incorporate, to the extent possible and not inconsistent with the emergency situation, all applicable requirements of these regulations.

11.10. Conditions Applicable to All Permits.

The following conditions apply to all hazardous waste management permits. All conditions applicable to all permits shall be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to these regulations shall be given in the permit.

11.10.1. Duty to Comply.

Any permit noncompliance constitutes a violation of these regulations and is grounds for enforcement action, for permit termination, revocation, or modification, or for denial of a permit renewal application. 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.

11.10.2. Duty to Reapply.

If the permittee wishes to continue a regulated activity after the expiration date of the permit, the permittee shall apply for and obtain a new permit.

11.10.3. 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.

11.10.4. 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 adverse impacts on human health or the environment.

11.10.5. Proper Operation and Maintenance.

The permittee shall at all times maintain in good working order and operate efficiently all treatment and control facilities or systems installed or used by the permittee to achieve compliance with the terms and 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 quality assurance procedures. Unless otherwise required by federal or State law 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.

Comment: The proper interpretation of this language is to permit the permittee to shutdown or operate these treatment and control facilities or systems to carry out such maintenance, repair, or overhaul as may be dictated by sound engineering and operating practice.

11.10.6. Permit Actions.

The permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, reissuance, termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

11.10.7. Property Rights.

The permit does not convey any property rights of any sort or any exclusive privilege. Possession 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 regulation.

11.10.8. Duty to Provide Information.

The permittee shall furnish to the chief within a specified time any relevant information which the chief or an authorized representative may request to determine whether cause exists for modifying, revoking and reissuing, suspending, revoking, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the chief or an authorized representative, upon request, copies of records to be kept as part of the permit.

11.10.9. Inspection and Entry.

The permittee shall allow the chief or an authorized representative, employee, or agent, upon the presentation of credentials and at reasonable times, to:

11.10.9.a. Enter any building, property, premises, place, vehicle, or permitted facility where hazardous wastes are or have been generated, treated, stored, transported, or disposed of for the purpose of making an investigation with reasonable promptness to ascertain the compliance by any person with the State Act and these regulations or permits issued by the chief.

11.10.9.b. Enter any establishment or other place maintained by any person where hazardous wastes are or have been stored, treated, or disposed of to inspect and take samples of wastes, soils, surface

water, and groundwater and samples of any containers or labelings for such wastes. In taking such samples, the Division may utilize such sampling methods as it determines to be necessary, including but not limited to, soil borings and monitoring wells. If the chief or an authorized representative, employee, or agent obtains any such samples prior to leaving the premises, the owner or operator or agent in charge shall be given a receipt describing the sample obtained and, if requested, a portion of each such sample equal in volume or weight to the portion retained. The Division shall promptly provide a copy of any analysis made to the owner, operator, or agent in charge.

11.10.9.c. Shall be given access to examine all records relating to the storage, treatment, or disposal of hazardous waste in the possession of any person who generates, stores, treats, transports, disposes of, or otherwise handles or has handled such waste. The chief or an authorized representative, employee, or agent shall be furnished with copies of all such records or given the records for the purpose of making copies.

11.10.10. Monitoring Records.

11.10.10.a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

11.10.10.b. The permittee shall retain records of all monitoring information including all calibration and maintenance records and all original chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, the certification required by Section 8.5.4.b.9 of these regulations, and records of all data used to complete the application for the permit for a period of three (3) years from the date of the sample, measurement, report, or application. This period may be extended by the chief at any time.

11.10.10.c. The permittee shall maintain records from all groundwater monitoring wells and associated groundwater surface elevations for the active life of the facility and, for disposal facilities, for the post-closure care period as well.

11.10.10.d. Records of monitoring information shall include:

11.10.10.d.1. The date, exact place, and time of sampling or measurements.

11.10.10.d.2. The individual(s) who performed the sampling or measurements.

11.10.10.d.3. The date(s) analyses were performed.

11.10.10.d.4. The individual(s) who performed the analyses.

11.10.10.d.5. The analytical techniques or methods used.

11.10.10.d.6. The results of such analyses.

11.10.11. Signatory Requirement.

All applications, reports, or information submitted to the chief shall be signed and certified as specified in Section 11.7 of these

regulations.

11.10.12. Reporting Requirements.

11.10.12.a. Planned Changes.

The permittee shall give written notice to the chief as soon as possible of any planned physical alterations or additions to the permitted facility. For a new hazardous waste management 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, until:

11.10.12.a.1. The permittee has submitted to the chief, 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

~~11.10.12.a.1.A.~~ 11.10.12.a.1.A. The chief has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of the permit; or

~~11.10.12.a.1.B.~~ 11.10.12.a.1.B. Within fifteen (15) days of the date of submission of the letter in Section 11.10.12.a.1 of these regulations, if the permittee has not received notice from the chief of the intent to inspect, prior inspection is waived and the permittee may commence treatment, storage, or disposal of hazardous waste.

11.10.12.b. Anticipated Noncompetence.

The permittee shall give advance written notice to the chief of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

11.10.12.c. (Reserved).

11.10.12.d. Transfers.

This permit is not transferrable except after notice to the chief, and 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 these regulations or the State Act. (See Section 11.18.2 of these regulations.)

11.10.12.e. Monitoring Reports.

Monitoring results shall be reported at the intervals specified.

11.10.12.f. Compliance Schedules.

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than fourteen (14) days following each schedule date.

11.10.12.g. Immediate Reporting.

The permittee shall report any noncompliance which may endanger health or environment immediately after becoming aware of the circumstances. A written submission shall also be provided within five (5) days. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; 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 recurrence of the noncompliance. The following shall also be reported immediately.

11.10.12.g.1. Information concerning release of any hazardous waste that may cause an endangerment to public drinking water supplies.

11.10.12.g.2. Any information of a release or discharge of hazardous waste, or of a fire or explosion from a hazardous waste management facility, which could threaten the environment or human health outside the facility. The description of the occurrence and its cause shall include:

~~44-40-42-g-2-ii-~~ 11.10.12.g.2.A. Name, address, and telephone number of the owner or operator;

~~44-40-42-g-2-iii-~~ 11.10.12.g.2.B. Name, address, and telephone number of the facility;

~~44-40-42-g-2-iiii-~~ 11.10.12.g.2.C. Date, time, and type of incident;

~~44-40-42-g-2-iv-~~ 11.10.12.g.2.D. Name and quantity of material(s) involved;

~~44-40-42-g-2-v-~~ 11.10.12.g.2.E. The extent of injuries, if any;

~~44-40-42-g-2-vi-~~ 11.10.12.g.2.F. An assessment of actual or potential hazards to the environment and human health outside the facility; and

~~44-40-42-g-2-vii-~~ 11.10.12.g.2.G. Estimated quantity and disposition of recovered material that resulted from the incident.

11.10.12.h. Other Noncompliance.

The permittee shall report all instances of noncompliance not reported under Sections 11.10.12.a, 11.10.12.e, 11.10.12.f, and 11.10.12.g of these regulations at the time monitoring reports are submitted. The report shall contain the information listed in Section 11.10.12.g of these regulations.

11.10.12.i. 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 chief, such facts or information shall be promptly submitted.

11.10.12.j. In addition, the following reports required by Section 8 of these regulations shall be submitted:

11.10.12.j.1. If a significant discrepancy in a manifest is discovered,

the permittee shall attempt to reconcile the discrepancy. If not resolved within fifteen (15) days, the permittee shall submit a written manifest discrepancy report, including a copy of the manifest, to the chief. (See Section 8.5.3 of these regulations.)

11.10.12.j.2. An unmanifested waste report must be submitted to the chief within fifteen (15) days of receipt of unmanifested waste. (See Section 8.5.5 of these regulations.)

11.10.12.j.3. An annual report must be submitted covering facility activities during the previous calendar year. (See Section 8.5.6 of these regulations.)

11.10.12.j.4. (Reserved).

11.10.13. (Reserved).

11.10.14. (Reserved).

11.10.15. (Reserved).

11.11. Establishing Permit Conditions.

~~44-44-a-~~ 11.11.1. In addition to conditions required in all permits, the chief shall establish conditions as required on a case-by-case basis, for the duration of permits, schedules of compliance, monitoring, and to provide for and assure compliance with all applicable requirements of the State Act and of these regulations, and any applicable statutory or regulatory requirement that takes effect prior to the final administrative disposition of a permit.

~~44-44-b-~~ 11.11.2. New or reissued permits, and to the extent allowed under Section 11.18 of these regulations modified or revoked and reissued permits, shall incorporate each of the applicable requirements in these regulations.

~~44-44-e-~~ 11.11.3. All preconditions shall be incorporated either expressly or by reference. If incorporated by reference, a specific citation to the applicable regulations or requirements shall be given in the permit.

11.12. Duration of Permits.

~~44-42-a-~~ 11.12.1. Hazardous waste management permits shall be effective for a fixed term not to exceed ten (10) years.

~~44-42-b-~~ 11.12.2. Except as provided in ~~Section 44-42-e~~ Section 11.12.3 of these regulations, the term of a permit shall not be extended by modification beyond the maximum duration specified in ~~Section 44-42-a~~ Section 11.12.1 of these regulations.

~~44-42-e-~~ 11.12.3. The conditions of an expired permit shall continue in force until the effective date of a new permit if:

~~44-42-e-1-~~ 11.12.3.a. The permittee has submitted a timely application under Section 11.5 of these regulations which is a complete application for a new permit; and

~~44-42-e-2~~ 11.12.3.b. The chief, through no fault of the permittee, does not issue a new permit with an effective date on or before the expiration date of the previous permit.

~~44-42-d~~ 11.12.4. ~~Permits continued under this paragraph~~ Section 11.12 of these regulations remain fully effective and enforceable. When the permittee is not in compliance with the conditions of the expiring or expired permit, the chief may choose to do any or all of the following:

~~44-42-d-1~~ 11.12.4.a. Initiate enforcement action based upon the permit which has been continued;

~~44-42-d-2~~ 11.12.4.b. Issue an order of denial for the new permit. If the permit is denied, the owner or operator would then be required to cease the activities authorized by the continued permit or be subject to an enforcement action for operating without a permit;

~~44-42-d-3~~ 11.12.4.c. Issue a new permit with appropriate conditions, or

~~44-42-d-4~~ 11.12.4.d. Take other actions authorized by statute or these regulations.

~~44-42-e~~ 11.12.5. The chief may issue any permit for a duration that is less than the full allowable term under ~~Section 44-42-a~~ Section 11.12.1 of these regulations.

11.13. Effect of a Permit.

Compliance with a permit during its term constitutes compliance, for purposes of enforcement with the State Act except under Section 17 of that Act; provided however, that a permit may be modified, suspended, revoked, revoked and reissued, or terminated during its term for cause as set forth in these regulations.

11.14. Transfer of Permits.

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, by the chief under Section 11.18.2.b of these regulations to identify the new permittee and incorporate such other requirements as may be necessary to comply with these regulations and the State Act.

11.15. Schedules of Compliance.

11.15.1. General.

The permit may, when appropriate, specify a schedule of compliance leading to compliance with these regulations.

11.15.1.a. Any schedules of compliance under ~~this section~~ Section 11.15 of these regulations shall require compliance as soon as possible.

11.15.1.b. Except as otherwise provided, if a permit establishes a schedule of compliance which exceeds one (1) year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievements.

11.15.1.b.1. The time between interim dates shall not exceed one (1) year.

11.15.1.b.2. If the time necessary for completion of any interim requirement is more than one (1) year and is not readily divisible into stages of 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.

11.15.1.c. The permit shall be written to require that no later than fourteen (14) days following each interim date and the final date of compliance, a permittee shall notify the chief, in writing, of his compliance or noncompliance with the interim or final requirements.

11.15.2. Alternative Schedules of Compliance.

A permit applicant or permittee may cease conducting regulated activities rather than continue to operate and meet permit requirements as follows:

11.15.2.a. If the permittee decides to cease conducting regulated activities at a given time within the term of a permit which has already been issued:

11.15.2.a.1. The permit may be modified to contain a new or additional schedule leading to timely cessation of activities; or

11.15.2.a.2. The permittee shall cease conducting permitted activities before noncompliance with any interim or final compliance schedule requirement already specified in the permit.

11.15.2.b. If the decision to cease conducting regulated activities is made before issuance of a permit whose terms will include the termination date, the permit shall contain a schedule leading to termination which will ensure timely compliance with applicable requirements.

11.15.2.c. If the permittee is undecided whether to cease conducting regulated activities, the chief may issue or modify a permit to contain two (2) schedules as follows:

11.15.2.c.1. 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 ensure sufficient time to comply with applicable requirements in a timely manner if the decision is to continue regulated activities.

11.15.2.c.2. One schedule shall lead to timely compliance with applicable requirements.

11.15.2.c.3. The second schedule shall lead to cessation of regulated activities by a date which will ensure timely compliance with applicable requirements.

11.15.2.c.4. Each permit containing two (2) schedules shall include a requirement that, after the permittee has made a final decision, a schedule leading to compliance shall follow 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.

11.15.2.d. The applicant's or permittee's decision to cease conducting regulated activities shall be evidenced by a firm public commitment satisfactory to the chief, such as a resolution of the board of directors of a corporation.

11.16. Requirements for Recording and Reporting of Monitoring Results.

All permits shall specify:

~~44-46-a-~~ 11.16.1. When appropriate, requirements concerning the proper use, maintenance, and installation of monitoring equipment or methods including biological monitoring methods and introduced tracer methods.

~~44-46-b-~~ 11.16.2. Required monitoring including type, intervals and frequency sufficient to yield data which are representative of the monitored activity including, when appropriate, continuous monitoring.

~~44-46-e-~~ 11.16.3. Applicable reporting requirements based upon the impact of the regulated activity and as specified in these regulations.

11.17. Modification, Revocation and Reissuance, Suspension, Termination, and Revocation of Permits.

~~44-47-a-~~ 11.17.1. Permits may be modified, revoked and reissued, suspended, revoked, or terminated either at the request of any interested person (including the permittee) or upon the chief's initiative. However, permits may only be modified, revoked and reissued, suspended, revoked or terminated for the reasons specified in Sections 11.18 and 11.19 of these regulations. All requests shall be submitted in writing and shall contain facts or reasons supporting the request.

~~44-47-b-~~ 11.17.2. If the chief tentatively decides to modify or revoke and reissue a permit and the modification is not made under Section 11.20 of these regulations, a draft permit under Section 11.21 of these regulations shall be prepared incorporating the proposed changes. The chief 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 chief shall require the submission of a new application.

~~44-47-e-~~ 11.17.3. In a permit modification under Section 11.17 of these regulations, only those conditions to be modified shall be reopened when a new draft permit is prepared. All other conditions of the existing permit shall remain in effect for the duration of the unmodified permit. When a permit is revoked and reissued under ~~this section~~ Section 11.17 of these regulations, the entire permit is reopened just as if the permit had expired and was being reissued. During any revocation and reissuance proceedings the permittee shall comply with all conditions of the existing permit until a new final permit is reissued.

~~44-47-d-~~ 11.17.4. "Minor modifications" as defined in Section 11.20 of

these regulations are not subject to the requirements of Section 11.17 of these regulations.

44-47-e. 11.17.5. If the chief tentatively decides to suspend, revoke, or terminate a permit, a notice of such intent shall be issued. A notice of intent to suspend, revoke, or terminate is a type of draft permit which follows the same procedure as any draft permit prepared under Section 11.21 of these regulations.

11.18. Modification or Revocation and Reissuance of Permits.

When the chief receives any information (e.g., inspects the facility, receives information submitted by the permittee as required in the permit, receives a request for modification or revocation and reissuance under Section 11.17 of these regulations, or conducts a review of the permit file), a determination may be made whether or not one or more of the causes listed for modification or revocation and reissuance or both exist. If cause exists, the chief may modify or revoke and reissue the permit accordingly, subject to the limitations of Section 11.18.3 of these regulations, and may request an updated application if necessary. If cause does not exist under ~~this section~~ Section 11.18 or Section 11.20 of these regulations, the chief shall not modify or revoke and reissue the permit. If a permit modification satisfies the criteria in Section 11.20 of these regulations for minor modifications, the permit may be modified without a draft permit or public review. Otherwise, a draft permit shall be prepared and other appropriate procedures followed.

11.18.1. Causes for Modification.

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:

11.18.1.a. Alterations.

There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.

11.18.1.b. Information.

If the chief has received information pertaining to circumstances or conditions existing at the time the permit was issued that were 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, the permit may be modified accordingly.

11.18.1.c. New Regulations.

The standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued. Permit may be modified during their terms for this cause only as follows:

11.18.1.c.1. For promulgation of amended standards or regulations, when:

~~44-48-4-e-1-i-~~ 11.18.1.c.1.A. The permit condition requested to be modified was based on a promulgated hazardous waste regulation.

~~44-48-4-e-1-ii-~~ 11.18.1.c.1.B. The State Water Resources Board or the director, or both, have revised, withdrawn, or modified that portion of the regulation on which the permit condition was based.

~~44-48-4-e-1-iii-~~ 11.18.1.c.1.C. A permittee requests modification within ninety (90) days after State Register notice of the action on which the request is based.

11.18.1.c.2. For judicial decision, a court of competent jurisdiction has remanded and stayed State regulations, if the remand and stay concern that portion of the regulations on which the permit condition was based and a request is filed by the permittee within ninety (90) days of judicial remand.

11.18.1.d. Compliance Schedules.

The chief determines good cause exists for modification of a compliance schedule such as an act of God, strike, flood, materials shortage, or other events over which the permittee has little or no control and for which there is not reasonably available remedy.

11.18.1.e. Other Causes.

The chief may also modify a permit:

11.18.1.e.1. When modification of a closure plan is required.

11.18.1.e.2. When the chief receives notification of expected closure pursuant to Section 8.6.4 of these regulations and determines the following permit conditions are unwarranted:

~~44-48-4-e-2-i-~~ 11.18.1.e.2.A. Extension of the ninety (90) to one hundred and eighty (180) day periods under Section 8.6.4 of these regulations;

~~44-48-4-e-2-ii-~~ 11.18.1.e.2.B. Modification of the 30-year post-closure period under Section 8.6.7.a of these regulations;

~~44-48-4-e-2-iii-~~ 11.18.1.e.2.C. Continuation of security requirements under Section 8.6.7.b of these regulations; or

~~44-48-4-e-2-iv-~~ 11.18.1.e.2.D. Permission to disturb the integrity of a containment system under Section 8.6.7 of these regulations.

11.18.1.e.3. When the permittee has filed a request under Section 13 of these regulations for a variance to the level of financial responsibility or when the chief demonstrates that an upward adjustment of the level of financial responsibility is required.

11.18.1.e.4. When a corrective action program specified in a permit under Section 8.13.9 of these regulations has not brought the regulated

unit into compliance with the groundwater protection standard within a reasonable period of time.

11.18.1.e.5. To include a monitoring program meeting the requirements of Section 8.13.8 of these regulations, when the owner or operator has been conducting a corrective action program under Section 8.13.9 of these regulations and the compliance period ends before the end of the post-closure care period for the unit.

11.18.1.e.6. To include conditions applicable to units at a facility that were not previously included in the facilities permit.

11.18.1.e.7. When a land treatment unit is not achieving complete treatment of hazardous constituents under its current permit conditions.

11.18.2. Causes for Modification or Revocation and Reissuance.

The following are causes to modify or, alternatively, revoke and reissue a permit:

11.18.2.a. Cause exists for revocation under Section 11.19 of these regulations and the chief determines that modification or revocation and reissuance is appropriate.

11.18.2.b. The chief has received notification of a proposed transfer of the permit.

11.18.3. Facility Siting.

The 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 an endangerment to human health or the environment exists which was unknown at the time of permit issuance.

11.19. Termination, Revocation, or Suspension of Permits.

~~44-49-a-~~ 11.19.1. The following are causes for revocation or suspension of a permit during its term, or for denying a permit renewal application:

~~44-49-a-1-~~ 11.19.1.a. Noncompliance by the permittee with any condition of the permit; or

~~44-49-a-2-~~ 11.19.1.b. The permittee's failure in 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; or

~~44-49-a-3-~~ 11.19.1.c. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit revocation.

~~44-49-b-~~ 11.19.2. The chief shall follow the applicable procedures set forth in ~~Section--44-47-e~~ Section 11.17.5 of these regulations for terminating, revoking, or suspending a permit.

11.20. Minor Modification of Permits.

Upon the consent of the permittee, the chief may modify a permit to make the corrections or allowances for changes in the permitted activity listed in Section 11.20 of these regulations, without following the required procedures found in Section 11.18 of these regulations. Any permit modification not processed as a minor modification under Section 11.20 of these regulations shall be made for causes and with draft permit and public notice as required. Minor modifications may only:

~~44-20-a-~~ 11.20.1. Correct typographical errors.

~~44-20-b-~~ 11.20.2. Require more frequent monitoring or reporting by the permittee.

~~44-20-e-~~ 11.20.3. Change an interim compliance date in a schedule of compliance, provided the new date is not more than one hundred twenty (120) days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement.

~~44-20-d-~~ 11.20.4. (Reserved).

~~44-20-e-~~ 11.20.5. Change the lists of facility emergency coordinators or equipment in the permit's contingency plan.

~~44-20-f-~~ 11.20.6. Change estimates of maximum inventory under Section 8.6.3 of these regulations.

~~44-20-g-~~ 11.20.7. Allow for a change in ownership or operational control of a facility where the chief determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility between the current and new permittees has been submitted to the chief. Changes in the ownership or operational control of the facility may be made if the new owner or operator submits a revised application no later than ninety (90) days prior to the scheduled change. When a transfer of ownership or operational control of a facility occurs, the old owner or operator shall comply with the requirements of Section 13 of these regulations, until the new owner or operator has demonstrated to the chief that he is complying with all the requirements of that section. The new owner or operator must demonstrate compliance with Section 13 of these regulations within six (6) months of the date of change in the ownership or operational control of the facility. Upon demonstration to the chief by the new owner or operator of compliance with Section 13 of these regulations, the chief shall notify the old owner or operator in writing that he no longer needs to comply with Section 13 of these regulations as of the date of demonstration.

~~44-20-h-~~ 11.20.8. Changes in estimates of expected year of closure or schedules of final closure.

11.21. Draft Permits.

~~44-24-a-~~ 11.21.1. Once an application is complete, the chief shall tentatively decide whether to prepare a draft permit or to deny the application.

~~44.24-b-~~ 11.21.2. If the chief decides to prepare a draft permit, a draft permit shall be prepared that contains the following information:

~~44.24-b-1-~~ 11.21.2.a. All conditions under Sections 11.10 and 11.11 of these regulations.

~~44.24-b-2-~~ 11.21.2.b. All compliance schedules under Section 11.15 of these regulations.

~~44.24-b-3-~~ 11.21.2.c. All monitoring requirements under Section 11.16 of these regulations.

~~44.24-b-4-~~ 11.21.2.d. Standards for treatment, storage, and disposal and other permit conditions under Section 11 of these regulations.

~~44.24-e-~~ 11.21.3. A fact sheet prepared in accordance with Section 11.22 of these regulations shall accompany the draft permit.

11.22. Fact Sheet.

~~44.22-a-~~ 11.22.1. A fact sheet shall be prepared by the chief for every draft permit for each hazardous waste management facility or activity. 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. The chief shall send this fact sheet to the applicant and, on request, to any other person.

~~44.22-b-~~ 11.22.2. The fact sheet shall include, when applicable:

~~44.22-b-1-~~ 11.22.2.a. A brief description of the type of facility or activity which is the subject of the draft permit.

~~44.22-b-2-~~ 11.22.2.b. The type and quantity of wastes, fluids, or pollutants which are proposed to be or are being treated, stored, disposed of, injected, emitted, or discharged. A description of the type of wastes, fluids, or pollutants shall include, but not be limited to, the characteristics of the waste materials and the potential effects on public health and the environment.

~~44.22-b-3-~~ 11.22.2.c. A brief summary of the basis for the draft permit conditions including references to applicable statutory or regulatory provisions.

~~44.22-b-4-~~ 11.22.2.d. Reasons why any requested variances or alternatives to required standards do or do not appear justified.

~~44.22-b-5-~~ 11.22.2.e. A description of the procedures for reaching a final decision on the draft permit including:

~~44.22-b-5-i-~~ 11.22.2.e.1. The beginning and ending dates of the comment period and the address where comments will be received;

~~44.22-b-5-ii-~~ 11.22.2.e.2. Procedures for requesting a hearing and the nature of that hearing; and

~~44.22-b-5-iii-~~ 11.22.2.e.3. Any other procedures by which the public may participate in the final decision.

~~44-22-b-6-~~ 11.22.2.f. Name and telephone number of a person to contact for additional information.

11.23. Public Access to Information.

~~44-23-a-~~ 11.23.1. Any records, reports, or information and any permit, permit applications, and related documentation within the chief's possession shall be available to the public for inspection and copying; provided, however, that upon a satisfactory showing to the chief that such records, reports, permit documentation, or information, or any part thereof would, if made public, divulge methods or processes or activities entitled to protection as trade secrets, the chief shall consider, treat, and protect such records as confidential.

~~44-23-b-~~ 11.23.2. It shall be the responsibility of the person claiming any information as confidential under the provisions of ~~Section-44-23-a~~ 11.23.1 of these regulations to clearly mark each page containing such information with the word "CONFIDENTIAL" and to submit an affidavit setting forth the reasons that said person believes that such information is entitled to protection.

~~44-23-e-~~ 11.23.3. Any document submitted to chief which contains information for which claim of confidential information is made shall be submitted in a sealed envelope marked "CONFIDENTIAL" and addressed to the chief. The document shall be submitted in two (2) separate parts. The first part shall contain all information which is not deemed by the person preparing the report as confidential and shall include appropriate cross-references to the second part which contains data, words, phrases, paragraphs, or pages and appropriate affidavits containing or relating to information which is claimed to be confidential.

~~44-23-d-~~ 11.23.4. No information shall be protected as confidential information by the chief unless it is submitted in accordance with the provisions of ~~Section-44-23-e~~ Section 11.23.3 of these regulations and no information which is submitted in accordance with the provisions of ~~Section-44-23-e~~ Section 11.23.3 of these regulations shall be afforded protection as confidential information unless the chief finds that such protection is necessary to protect trade secrets. The person who submits information claimed as confidential shall receive written notice from the chief as to whether the information has been accepted as confidential or not.

~~44-23-e-~~ 11.23.5. All information which meets the tests of ~~Section 44-23-d~~ Section 11.23.4 of these regulations shall be marked with the term "ACCEPTED" and shall be protected as confidential information. If said person fails to satisfactorily demonstrate to the chief that such information in the form presented to him meets the criteria of ~~Section 44-23-e-~~ Section 11.23.5 of these regulations, the chief shall mark the information "REJECTED" and promptly return such information to the person submitting such information.

~~44-23-f-~~ 11.23.6. Nothing contained herein shall be construed so as to restrict the release of relevant confidential information during situations declared to be emergencies by the chief or his designee.

~~44-23-g-~~ 11.23.7. Nothing in Section 11.23 of these regulations may be

construed as limiting the disclosure of information by the Division to any officer, employee, or authorized representative of the State or federal government concerned with effecting the purposes of Section 11.23 of these regulations.

~~44.23-h-~~ 11.23.8. Persons interested in obtaining information pursuant to ~~this--section~~ Section 11.23 of these regulations should submit a request in accordance with ~~the--Water--Resources--Board's--Freedom--of--Information--Act--Regulations~~ West Virginia Administrative Regulations, Water Resources Board, Series 8.

~~44.23-i-~~ 11.23.9. Claims of confidentiality for the name and address of any permit applicant or permittee will be denied.

11.24. Public Participation in Permit Process.

11.24.1. Scope.

Public notice shall be given that the following actions have occurred:

11.24.1.a. A draft permit has been prepared; or

11.24.1.b. A hearing has been scheduled.

11.24.2. Timing.

11.24.2.a. Public notice of the preparation of a draft permit required under ~~this--section~~ Section 11.24 of these regulations shall allow at least forty-five (45) days for public comment.

11.24.2.b. Public notice of a public hearing shall be given at least thirty (30) days before the hearing.

11.24.3. Methods.

Public notice of activities described in Section 11.24 of these regulations shall be given by the following methods:

11.24.3.a. By mailing a copy of a notice to the following persons:

11.24.3.a.1. The applicant;

11.24.3.a.2. Any federal or state agency which the chief knows has issued or is required to issue a RCRA, UIC, PSD, NPDES, or 404 permit for the same facility or activity including, but not limited to, the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers;

11.24.3.a.3. Each State agency having authority under State law with responsibility to the construction or operation of such facility;

11.24.3.a.4. Any unit of local government having jurisdiction over the area where the facility is proposed to be located;

11.24.3.a.5. Other appropriate federal or state agencies including, but not limited to, the U.S. Fish and Wildlife Service, the U.S. Forest Service, the West Virginia Department of Culture and History, the West

Virginia Department of Health, other governmental authorities including any affected states, and the Advisory Council on Historic Preservation (Suite 430, 1522 K Street, N.W., Washington, DC 20005); and

11.24.3.a.6. Persons on a mailing list developed by:

~~11.24.3.a.6.i.~~ 11.24.3.a.6.A. Including those who request in writing to be on the list.

~~11.24.3.a.6.ii.~~ 11.24.3.a.6.B. Soliciting persons for "area lists" from participants in past permit proceedings in that area.

~~11.24.3.a.6.iii.~~ 11.24.3.a.6.C. Notifying the public of the opportunity to be put on the mailing list through periodic publication in the public press and in appropriate publications of the State.

11.24.3.b. By publishing the public notice, in the form of a Class I legal advertisement in a qualified daily or weekly newspaper of general circulation and broadcasting the public notice over local radio stations in the area in which the facility is or is proposed to be located. A qualified daily or weekly newspaper is, for the purposes of Section 11.24 of these regulations, any newspaper which meets the provisions of W. Va. Code §59-3-1(b).

11.24.3.c. By any other method reasonably calculated 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.

11.24.3.d. Any person otherwise entitled to receive notice under Section 11.24 of these regulations may waive the right to receive notice for any classes and categories of permits.

11.24.4. Personal Notification by Facility Owner or Operator to Individual Residents.

11.24.4.a. Following submittal of a Part B application which is deemed complete by the chief, and before the public notice of the preparation of a draft permit as required under Section 11.14.1 of these regulations, the facility owner or operator shall serve notice upon the residence of all persons residing within one-quarter mile of the boundaries of the specific hazardous waste management facility.

11.24.4.b. Service of such notice as herein provided shall be made by delivering a copy to the residence of each person upon whom service must be made or by mailing it by registered mail to the last known address of each person or by such other reasonable means as the chief and the owner or operator agree will provide an effective and practical method of notification.

11.24.4.c. Following completion of service of notice as set forth herein, and no later than the date of the public notice required in Section 11.24.1 of these regulations, the owner or operator shall certify in writing to the chief that service has been completed, describe the method of service, and provide a copy of the written notice employed to the chief.

11.24.4.d. The personal notice required herein shall be a written notice containing at a minimum:

11.24.4.d.1. The name and address of the permit applicant;

11.24.4.d.2. The name, location, and type of hazardous waste management facility for which the application has been submitted;

11.24.4.d.3. A statement advising the recipients of the notice that a complete application for permit has been submitted; and

11.24.4.d.4. A statement advising the notice recipients that an opportunity for public comment upon the application and draft permit will be made available to them upon completion of Department review of the application and that such notice will be published as a legal advertisement in a local newspaper and broadcast over the radio.

11.24.5. Contents.

11.24.5.a. All public notices issued under Section 11.24 of these regulations shall contain the following information:

11.24.5.a.1. Name and address of the office processing the permit action for which notice is being given.

11.24.5.a.2. Name and address of the permittee or permit applicant and, if different, of the facility or activity regulated by the permit.

11.24.5.a.3. A brief description of the business conducted at the facility described in the permit application or the draft permit.

11.24.5.a.4. The name, address, and telephone number of a person from whom interested persons may obtain further information, including copies of the draft permit or fact sheet, and the application.

11.24.5.a.5. A brief description of the comment procedures required by Sections 11.25 and 11.26 of these regulations and the time and place of any hearing that will be held, including a statement of procedures to request a hearing unless already scheduled, and other procedures by which the public may participate in the final permit decision.

11.24.5.b. In addition to the general public notice described in Section 11.24.5.a of these regulations, the public notice of a hearing shall contain the following information:

11.24.5.b.1. Reference to the date of previous public notices relating to the permit;

11.24.5.b.2. Date, time, and place of the hearing;

11.24.5.b.3. A brief description of the nature and purpose of the hearing, including the applicable rules and procedures; and

11.24.5.b.4. Name and address of the nearest district office where the file will be available for inspection.

11.24.5.c. In addition to the general public notice, all persons

identified in Section 11.24.3 of these regulations shall be mailed a copy of the fact sheet, the permit application, and the draft permit.

11.25. Public Comment and Requests for Public Hearings.

During the public comment period provided 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 Sections 11.28 and 11.29 of these regulations.

11.26. Public Hearings.

11.26.1. The chief shall hold a public hearing whenever he finds, on the basis of requests, a significant degree of public interest in a draft permit(s). The chief may also hold a public hearing at his discretion whenever, for instance, such hearing might clarify one or more issues involved in the permit decision.

11.26.2. The chief shall hold a public hearing upon receiving written notice of opposition to a draft permit and a request for a public hearing within forty-five (45) days of the public notice. Whenever possible the chief shall schedule a hearing under Section 11.26 of these regulations at a location convenient to the nearest population center to the proposed facility. Public notice of the hearing shall be given as specified in Section 11.24 of these regulations.

11.27. (Reserved).

11.28. Reopening of the Public Comment Period.

~~44-28-a-~~ 11.28.1. If any data, information, or arguments submitted during the public comment period appear to raise substantial new questions concerning a permit, the chief may take one or more of the following actions:

~~44-28-a-1-~~ 11.28.1.a. Prepare a new draft permit, appropriately modified, under Section 11 of these regulations.

~~44-28-a-2-~~ 11.28.1.b. Prepare a revised fact sheet under Section 11 of these regulations and reopen the comment period.

~~44-28-a-3-~~ 11.28.1.c. Reopen or extend the comment period under Section 11 of these regulations to give interested persons an opportunity to comment on the information or arguments submitted.

~~44-28-b-~~ 11.28.2. Comments filed during the reopened comment period shall be limited to the substantial new questions that caused its reopening. The public notice under Section 11 of these regulations shall define the scope of the reopening.

11.29. Response to Comments.

~~44-29-a-~~ 11.29.1. At the time that any final permit is issued, the chief shall issue a response to comments. This response shall be in

writing and shall:

~~44-29-a-1~~ 11.29.1.a. Specify which provisions, if any, of the draft permit have been changed in the final permit and the reasons for change; and

~~44-29-a-2~~ 11.29.1.b. Briefly describe and respond to all significant comments on the draft permit raised during the public comment period or during any hearing.

~~44-29-b~~ 11.29.2. The response to comments shall be delivered to any person who commented or any person who requests the same.

11.30. Permits for Land Treatment Demonstrations Using Field Test or Laboratory Analysis.

~~44-30-a~~ 11.30.1. For the purpose of allowing an owner or operator to meet the treatment demonstration requirements of Section 8.12.3 of these regulations, the chief may issue a treatment demonstration permit. The permit must contain only those requirements necessary to meet the standards in Section 8.12.3.c of these regulations. 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.

~~44-30-a-1~~ 11.30.1.a. The chief 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.

~~44-30-a-2~~ 11.30.1.b. If the chief 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 Section 8.12 of these regulations, he must issue a treatment demonstration permit covering only the field test or laboratory analyses.

~~44-30-b~~ 11.30.2. If the chief 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 chief finds may be necessary under Section 8.12.3.c of these regulations. The chief will include conditions in the second phase of the facility permit to attempt to meet all Section 8.12 requirements pertaining to unit design, construction, operation, and maintenance. The chief 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. The first and second phases of the permit shall become effective as specified by the chief regarding that permit.

~~44-30-e~~ 11.30.3. When the owner or operator who has been issued a two-phase permit has completed the treatment demonstration, he must submit

to the chief a certification, signed by a person authorized to sign a permit application or report under Section 11.7 of these regulations, 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 test or analyses. The owner or operator must also submit all data collected during the field tests or laboratory analyses within ninety (90) days of completion of those tests or analyses unless the chief approves a later date.

~~44-39-d-~~ 11.30.4. If the chief determines that the results of the field tests or laboratory analyses meet the requirements of Section 8.12.3 of these regulations, he will modify the second phase of the permit to incorporate any requirements necessary for operation of the facility in compliance with Section 8.12 of these regulations based upon the results of the field tests or laboratory analyses.

~~44-39-d-4-~~ 11.30.4.a. This permit modification may proceed as a minor modification under Section 11.20 of these regulations, provided any such changes is minor or otherwise will proceed as a modification under Section 11.18.1 of these regulations.

~~44-39-d-2-~~ 11.30.4.b. If no modifications of the second phase of the permit are necessary, or if only minor modifications are necessary and have been made, the chief 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 40 C.F.R. §124.15(b).

~~44-39-d-3-~~ 11.30.4.c. If modification under Section 11.18.1 of these regulations are necessary, the second phase of the permit will become effective only after those modifications have been made.

§47-35-12. Location Standards for Hazardous Waste Management Facilities.

12.1. General.

Section 12 of these regulations describes the location restrictions for the construction or placement of new hazardous waste management facilities.

12.1.1. Seismic Considerations.

12.1.1.a. Portions of new facilities where treatment, storage, or disposal of hazardous waste must not be located within 61 meters (200 feet) of a fault which has had displacement in the Holocene.

12.1.1.b. As used in Section 12.1.1.a of these regulations.

12.1.1.b.1. "Fault" means a fracture along which rocks strata on one side have been displaced with respect to those on the other side.

12.1.1.b.2. "Displacement" means the relative movement of any two sides of a fault measured in any direction.

12.1.1.b.3. "Holocene" means the most recent epoch of the Quaternary

Period, extending from the end of the Pleistocene to the present.

12.1.2. Karst Terrain.

12.1.2.a. Facilities must not be located on areas of karst terrain.

12.1.2.b. As used in Section 12.1.2.a of these regulations, "karst terrain" is that terrain underlain by carbonate (limestone and dolomite) bedrock containing voids, caves, and underground streams into which surface drainage flows through solution openings and sink holes produced by solution of the carbonate rock.

12.1.2.c. The location restriction of Section 12.1.2.a of these regulations shall be limited to all disposal facilities and to storage or treatment surface impoundments.

12.1.3. Subsurface Mining Areas.

12.1.3.a. Portions of new facilities where hazardous waste management will be conducted must not be located within 305 meters (1,000 feet) of a surface area likely to be influenced by underground mining. The outer limits of the surface area thus influenced are defined as that area beyond the point that may be considered the practical limit of subsidence as determined by the angle of the draw.

12.1.3.b. As used in Section 12.1.3.a of these regulations:

12.1.3.b.1. "Angle of draw" is the angle between the vertical line drawn from the edge of the underground opening and the point at the surface where the subsidence diminishes to zero.

12.1.3.c. The location restriction of Section 12.1.3.a of these regulations shall be limited to all disposal facilities and to storage or treatment surface impoundments.

12.1.4. Critical Recharge Areas.

12.1.4.a. Facilities must not be located in critical recharge areas.

12.1.4.b. As used in Section 12.1.4.a of these regulations, "critical recharge areas" are those surface land areas which serve as recharge areas for those portions of aquifers used for public water supply.

12.1.4.c. The location restriction of Section 12.1.4.a of these regulations shall be limited to those surface land areas which recharge portions of aquifers serving as a public groundwater supply. A public groundwater supply means a groundwater supply system serving at least fifteen (15) service connections or an average of twenty-five (25) or more permanent residents on a year-round basis.

12.1.4.d. The location restriction of 12.1.4.a of these regulations shall be limited to all disposal facilities and to storage or treatment surface impoundments.

12.1.5. Wetlands.

12.1.5.a. No facility shall be located in wetlands or in areas that may

have an impact on wetlands.

12.1.5.b. The location of facilities that have the potential for influencing wetlands shall be determined by the chief.

12.1.5.c. As used in Section 12.1.5.a of these regulations:

12.1.5.c.1. "Wetlands" are those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, wet meadows, mudflats, sandflats, and natural ponds.

12.1.6. Dam-Related Flood Hazard Areas.

12.1.6.a. No facility shall be located within dam-related "danger reach" flood hazard areas where a dam or any water impounding structure which when breached may cause inundation of the facility involved has not received the necessary permits or approvals from the appropriate state or federal agencies. In no case should facilities be located within the flood pool of any dam.

12.1.6.b. As used in Section 12.1.6.a of these regulations:

12.1.6.b.1. The "danger reach" is the land area immediately adjacent to a river or stream below a water-impounding structure or dam. The extent of the danger reach is that area which would be inundated by the flow of water from the impoundment created by the dam if the dam were to fail.

12.1.6.b.2. The "flood pool" is the land area above the dam or water impounding structure surrounding the impoundment which will flood due to increased water levels in the impoundment as a result of abnormally high runoff or precipitation events. The extent of the flood pool is limited by the land contour at the same elevation as the crest of the dam or impounding structure.

12.1.7. Floodplains.

12.1.7.a. A new or existing hazardous waste management floodplains facility located in a 100-year floodplain must be designed, constructed, operated, and maintained to prevent washout of any hazardous waste by a 100-year flood unless the owner or operator can demonstrate to the chief that procedures are in effect which will cause the waste to be removed safely before floodwaters can reach the facility to a location where the wastes will not be vulnerable to floodwaters.

Comment: The location where wastes are moved must be an approved facility which is either permitted by EPA under 40 C.F.R. Part 270, authorized to manage hazardous waste by a state with a hazardous waste management program authorized under 40 C.F.R. Parts 123 and 271, permitted by Section 11 of these regulations, or in interim status under 40 C.F.R. Parts 265 and 270 and Section 10 of the State Act.

12.1.7.b. As used in Section 12.1.7.a of these regulations:

12.1.7.b.1. "100 year floodplain" means any land area which is subject to a one percent (1%) or greater chance of flooding in any given year from any source.

12.1.7.b.2. "Washout" means the movement of hazardous waste from the active portion of the facility as a result of flooding.

12.1.7.b.3. "100-year flood" means a flood that has a one percent (1%) chance of being equalled or exceeded in any given year.

Comment: Procedures for demonstrating compliance with each of these standards in Part B of the permit application are specified in Section 11.5.1 of these regulations.

§47-35-13. Financial Requirements.

13.1. The director hereby adopts and incorporates by reference in Subpart H of 40 C.F.R. Parts 264 and 265 as published in the Code of Federal Regulations on the date specified in ~~Section 1.6~~ Section 1.5 of these regulations, with the following modifications:

13.1.1. The adopted provisions contained in Sections 264.143(f), 265.143(e), 264.145(f), 265.145(e), 264.147(f), and 265.147(f) of the Code of Federal Regulations shall be amended by the addition of the following paragraph:

"Notwithstanding the above, the director may disallow the use of this test on the basis of information that the owner or operator has violated or is in violation of any state or federal law or regulation pertaining to environmental protection. The owner or operator must provide alternate financial assurance as specified in this section within thirty (30) days after notification of the disallowance."

13.1.2. The provisions contained in Sections 264.149, 265.149, 264.150, and 265.150 of the Code of Federal Regulations shall be deleted.

13.1.3. Wherever the term Administrator or Regional Administrator is used, the term shall have the meaning of the director of the West Virginia Department of Natural Resources.

13.1.4. Wherever the term Environmental Protection Agency or EPA is used, the term shall have the meaning of the West Virginia Department of Natural Resources.

13.1.5. The adopted provisions contained in Sections 264.147(b)(4)(iii) and 265.147(b)(4)(iii) of Code of Federal Regulations shall be amended to read: "All other owners or operators, thirty (30) days after the effective date of these regulations."

§47-35-14. (Reserved).

§47-35-15. Deed and Lease Disclosures; Approval for Land Disturbance.

15.1. Notice in Deed to Property.

~~45-4-a-~~ 15.1.1. The owner of the property on which a hazardous waste management facility is located must record, in accordance with State law, a notation on the deed or lease 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:

~~45-4-a-1-~~ 15.1.1.a. The land has been used to manage hazardous wastes;

~~45-4-a-2-~~ 15.1.1.b. Its use is restricted under Section 8.6.7.c of these regulations; and

~~45-4-b-~~ 15.1.2. Upon actual transfer of property which contains hazardous wastes that have been stored, treated, or disposed of, the previous owner shall notify the chief in writing of such transfer.

15.2. Approval for Land Disturbance.

~~45-2-a-~~ 15.2.1. Before the owner or operator or any subsequent owner of the land upon which a hazardous waste disposal facility was located, engages in filling, grading, excavating, building, drilling, or mining on the property, or engaging in any activity which will disturb the closure of said area, the chief must be notified and the owner or operator must obtain authorization prior to commencing such activity.

15.3. Survey Plat.

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 chief 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 prominently displayed note which states the owner's or operator's obligation to restrict disturbance of the hazardous waste disposal unit in accordance with Section 8.6.7.c of these regulations.

15.4. Post-Closure Notices.

15.4.1. No later than sixty (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 chief a record of the type, locations, 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.

15.4.2. Within sixty (60) days of certification of closure of the first hazardous waste disposal unit and within sixty (60) days of certification of closure of the last hazardous waste disposal unit, the owner or operator must:

15.4.2.a. 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:

15.4.2.a.1. 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 Sections 15.3 and 15.4.1 of these regulations have been filed with the local zoning authority or the authority with jurisdiction over local land use and with the chief; and

15.4.2.b. Submit a certification, signed by the owner or operator, that he has recorded the notation specified in Section 15.4.2.a of these regulations, including a copy of the document in which the notation has been placed to the chief.

15.4.3. 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), or contaminated soils, he must request a modification to the post-closure permit in accordance with the applicable requirements in Section 11 of these regulations. The owner or operator must demonstrate that the removal of hazardous wastes will satisfy the criteria of Section 8.6.7.c of these regulations. By removing hazardous waste, the owner or operator may become a generator of hazardous waste and must manage that waste in accordance with all applicable requirements of these regulations. If he is granted a permit modification or otherwise granted approval to conduct such removal activities, the owner or operator may request that the chief approve the addition of a notation to the deed or instrument indicating the removal of the hazardous waste.

15.5. Other Requirements.

Nothing contained in Section 15 of these regulations shall relieve any person from complying with the requirements on deed and lease disclosures set forth in Section 20 of the State Act.

§47-35-16. Notices of Changes.

16.1. Notices of Amendments to Federal Law or Regulations.

Persons desiring to call to the attention of the director amendments to the federal Solid Waste Disposal Act, as amended, or regulations promulgated pursuant thereto, may do so by filing a notice with the director identifying the amendment which has been made to the federal Solid Waste Disposal Act, as amended, or regulations promulgated pursuant thereto, and identifying the provision of these regulations which such person believes should be amended.

16.2. Petitions for Waste Exclusions.

~~46.2-a-~~ 16.2.1. Persons desiring to exclude a waste at a particular generating facility from the lists in Section 3.4 of these regulations must petition the director for such an exclusion. The petition shall include:

~~46.2.a.4.~~ 16.2.1.a. A copy of the petition submitted to the Administrator pursuant to 40 C.F.R. §260.22, including all demonstration information;

~~46.2.a.2.~~ 16.2.1.b. A copy of the administrator's approval granting the exclusion pursuant to 40 C.F.R. §260.20(d); and

~~46.2.a.3.~~ 16.2.1.c. Any other additional information which may be required for the director to evaluate the petition.

~~46.2.b.~~ 16.2.2. Within one hundred and twenty (120) days of the filing of the petition the director shall decide whether to approve or to deny the petition and so advise the petitioner. Where a decision to deny a petition is made, the director shall notify the petitioner of such action in writing, setting forth the reasons therefor.

~~46.2.e.~~ 16.2.3. The director shall not deny a petition to exclude a waste at a particular facility that has been approved by the EPA Administrator unless scientifically supportable reasons for such denial are advanced which had not been presented to the EPA Administrator.

16.3. Variances from Classification as a Waste.

16.3.1. General.

In accordance with the standards and criteria in Sections 16.3.2 of these regulations and the procedures in Section 16.3.3 of these regulations, the director may determine on a case-by-case basis that the following recycled materials are not wastes:

16.3.1.a. Materials that are accumulated speculatively without sufficient amounts being recycled (as defined in ~~Section 3.1.e.8~~ Section 3.1.1.c.8 of these regulations):

16.3.1.b. Materials that are reclaimed and then reused within the original primary production process in which they were generated; or

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

16.3.2. Standards and Criteria.

16.3.2.a. The director may grant requests for a variance from classification as a waste for 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 calendar year. A variance granted under Section 16 of these regulations is valid only from the date of approval through the following calendar year but may be renewed on an annual basis by filing a new application for such variance. The director will base the decision to grant or deny a variance under this subsection on the following standards and criteria:

16.3.2.a.1. 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 (e.g., because of past practice, market factors, the nature of the material, or contractual

arrangements for recycling);

16.3.2.a.2. The reason that the applicant has accumulated the material for one or more years without recycling seventy-five percent (75%) of the volume accumulated at the beginning of the calendar year;

16.3.2.a.3. The quantity of material already accumulated and the quantity expected to be generated and accumulated before the material is recycled;

16.3.2.a.4. The extent to which the material is handled to minimize loss; and

16.3.2.a.5. Other relevant factors.

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

16.3.2.b.1. How economically viable the production process would be if it were to use virgin materials, rather than reclaimed materials;

16.3.2.b.2. The prevalence of the practice on an industry-wide basis;

16.3.2.b.3. The extent to which the material is handled before reclamation to minimize loss;

16.3.2.b.4. The time periods between generating the material and its reclamation and between reclamation and return to the original primary production process;

16.3.2.b.5. The location of the reclamation operation in relation to the production process;

16.3.2.b.6. 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;

16.3.2.b.7. Whether the person who generates the material also reclaims it; and

16.3.2.b.8. Other relevant factors.

16.3.2.c. The director may grant requests for a variance from classifying as a 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 must be reclaimed further. This determination will be based on the following factors:

16.3.2.c.1. The degree of processing the material has undergone and the degree of further processing that is required to complete recovery of the material;

16.3.2.c.2. The value of the material after it is reclaimed;

16.3.2.c.3. The degree to which the reclaimed material has been like an analogous raw material;

16.3.2.c.4. The extent to which an end market for the reclaimed material is guaranteed;

16.3.2.c.5. The extent to which the reclaimed material is handled to minimize loss; and

16.3.2.c.6. Other relevant factors.

16.3.3. Variance Procedures.

16.3.3.a. An applicant for a variance from classification as a waste under Section 16 of these regulations must apply to the director. The application must address the applicable criteria or standards contained in Section 16.3.2 of these regulations.

16.3.3.b. The director will evaluate the application and issue a public notice of the tentative determination to grant or deny a variance from classification as a waste. Notification of this tentative determination will be provided in the manner prescribed in Section 11.24.3.b of these regulations. The director will accept public comment on the tentative variance determination for thirty (30) days, and may also hold a public hearing upon request or at his discretion. The director will issue a final decision after receipt of public comments and the hearing (if any). Such final decision may not be appealed to the State Water Resources Board.

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.

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 the American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, PA 19103.

Containerized liquid wastes: "COLIWASA" described in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods," SW-846 (Second Edition, 1982, as amended by Update I of April 1984 and Update II of April 1985), U.S. Environmental Protection Agency, Office of Solid Waste, Washington, DC. (~~hereafter-referred-to-as--SW-846~~) Copies of this document may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Liquid waste in pits, ponds, lagoons, and similar reservoirs: "Pond Sampler" described in SW-846.

APPENDIX II

EP Toxicity Test Procedure

A. Extraction Procedure (EP).

1. A representative sample of the waste to be tested (minimum size 100 grams) should be obtained using the methods specified in Appendix I of these regulations or any other methods capable of yielding a representative sample within the meaning of 40 C.F.R. Part 260. (For detailed guidance on conducting the various aspects of the EP, see SW-846.)

2. The sample should be separated into its component liquid and solid phases using the method described in "Separation Procedure" below. If the solid residue obtained using this method totals less than 0.5 percent of the original weight of the waste, the residue can be discarded and the operator should treat the liquid phase as the extract and proceed immediately to Step 8. The percent solids is determined by drying the filter pad at 80 degrees C until it reaches the constant weight and then calculating the percent solids using the following equation:

$$\frac{(\text{Weight of pad + solid}) - (\text{tare weight of pad})}{\text{Initial weight of sample}} \times 100 = \% \text{ solids}$$

3. The solid material obtained from the separation procedure should be evaluated for its particle size. If the solid material has a surface area per gram of material equal to or greater than 3.1 cm or passes through a 9.5 mm (0.375 inch) standard sieve, the operator should proceed to Step 4 below. If the surface area is smaller or the particle size larger than specified above, the solid material should be prepared for extraction by crushing, cutting or grinding the material so that it passes through a 9.5 mm (0.375 inch) sieve or, if the material is in a single piece, by subjecting the material to the "Structural Integrity Procedure" described below.

4. The solid material obtained in Step 3 above should be weighed and placed in an extractor with sixteen (16) times its weight of deionized water. Do not allow the material to dry prior to weighing. For purposes of this test, an acceptable extractor is one which will impart sufficient agitation to the mixture to not only prevent stratification of the sample and extraction fluid but also insure that all sample surfaces are continuously brought into contact with well mixed extraction fluid.

5. After the solid material and deionized water are placed in the extractor, the operator should begin agitation and measure the pH of the solution in the extractor. If the pH is greater than 5.0, the pH of the solution should be decreased to 5.0 by adding 0.5N acetic acid. If the pH is equal to or less than 5.0, no acetic acid should be added. The pH of the solution should be monitored, as described below, during the course of the extraction and, if the pH rises above 5.2, 0.5N acetic acid should be added to bring the pH down to 5.0. However, in

no event shall the aggregate amount of acid added to the solution exceed four milliliters (4 ml) of acid per gram of solid. The mixture should be agitated for twenty-four hours and maintained at 20 to 40 degrees C (68 to 104 degrees F) during this time. It is recommended that the operator monitor and adjust the pH during the course of the extraction with a device such as the Type 45-A pH Controller manufactured by Chemtrix, Inc., Hillsboro, Oregon 97123 or its equivalent, in conjunction with a metering pump and reservoir of 0.5N acetic acid. If such a system is not available, the following manual procedure shall be employed:

(a) A pH meter should be calibrated in accordance with the manufacturer's specifications.

(b) The pH of the solution should be checked and, if necessary, 0.5N acetic acid should be manually added to the extractor until the pH reaches 5.0. The pH of the solution should be adjusted at fifteen-, thirty-, and sixty-minute intervals, moving to the next longer interval if the pH does not have to be adjusted more than 0.5N pH units.

(c) The adjustment procedure should be continued for at least six hours.

(d) If at the end of the 24-hour extraction period the pH of the solution is not below 5.2 and the maximum amount of acid (4 ml per gram of solids) has not been added, the pH should be adjusted and the extraction continued for an additional four hours, during which the pH should be adjusted at one hour intervals.

6. At the end of the 24-hour extraction period, deionized water should be added to the extractor in an amount determined by the following equation:

$$V = -(20)(W) - 16(W) - A$$

V = ml Deionized water to be added

W = weight in grams of solid charged to extractor

A = ml of 0.5N acetic acid added during extraction

7. The material in the extractor should be separated into its component liquid and solid phases as described under "Separation Procedure" below.

8. The liquids resulting from Steps 2 and 7 should be combined. This combined liquid (or the waste itself if it has less than 0.5 percent solids, as noted in Step 2) is the extract and should be analyzed for the presence of any of the contaminants specified in Table II of these regulations using the "Analytical Procedures" designated below.

B. Separation Procedure.

1. Equipment.

A filter holder designed for filtration media having a nominal pore size of 0.45 micrometers and capable of applying a 5.3 kg/cm hydrostatic pressure to the solution being filtered shall be used. For mixtures containing nonabsorptive solids, where separation can be affected without imposing a 5.3 kg/cm pressure differential, vacuum filters employing a 0.45 micrometer filter media can be used. (For further guidance on filtration equipment or procedures, see SW-846.)

2. Procedure.

This procedure is intended to result in separation of the "free" liquid portion of the waste from any solid matter having a particle size 0.45 micrometer. If the sample will not filter, various other separation techniques can be used to aid in the filtration. As described above, pressure filtration is employed to speed up the filtration process. This does not alter the nature of the separation. If liquid does not separate during filtration, the waste can be centrifuged. If separation occurs during centrifugation the liquid portion (centrifugate) is filtered through the 0.45 micrometer filter prior to becoming mixed with the liquid portion of the waste obtained from the initial filtration. Any material that will not pass through the filter after centrifugation is considered a solid and is extracted.

(a) Following manufacturers' directions, the filter unit should be assembled with a filter bed consisting of a 0.45 micrometer filter membrane. For difficult or slow to filter mixtures a prefilter bed consisting of the following prefilters in increasing pore size (0.65 micrometer membrane, fine glass fiber prefilter, and coarse glass fiber prefilter) can be used.

(b) The waste should be poured into the filtration unit.

(c) The reservoir should be slowly pressurized until liquid begins to flow from the filtrate outlet at which point the pressure in the filter should be immediately lowered to 10 to 15 psig. Filtration should be continued until liquid flow ceases.

(d) The pressure should be increased stepwise in 10 psi. The pressure should be increased stepwise in 10 psi increments to 75 psig and filtration continued until flow ceases or the pressurizing gas begins to exit from the filtrate outlet.

(e) The filter unit should be depressurized, the solid material removed and weighed and then transferred to the extraction apparatus, or, in the case of final filtration prior to analysis, discarded. Do not allow the material retained on the filter pad to dry prior to weighing.

(f) The liquid phase should be stored at 4 degrees C for subsequent use in Step 8.

C. Structural Integrity Procedure.

1. Equipment.

A structural integrity tester having 3.18 cm (1.25 in.) diameter hammer weighing 0.33 kg (0.73 lbs.) and having a free fall of 15.24 cm (6 in.) shall be used. This device is available from Associated Design and Manufacturing Company, Alexandria, VA., 22314, as Part No. 125, or it may be fabricated to meet the specifications shown in Figure 1 below.

2. Procedure.

(a) The sample holder should be filled with the material to be tested. If the sample of waste is a large monolithlock, a portion should be cut from the block having the dimensions of a 3.3 cm (1.3 in.) diameter x 7.1 cm (2.8 in.) cylinder. For a fixated waste, samples may be case in the form of a 3.3 cm (1.3 in.) diameter x 7.1 cm (2.8 in.) cylinder for purposes of conducting this test. In such cases, the waste may be allowed to cure for thirty days prior to further testing.

(b) The sample holder should be placed into the structural integrity tester, then the hammer should be raised to its maximum height and dropped. This should be repeated fifteen times.

(c) The material should be removed from the sample holder, weighed, and transferred to the extraction apparatus for extraction.

D. Analytical Procedures for Analyzing Extract Contaminants.

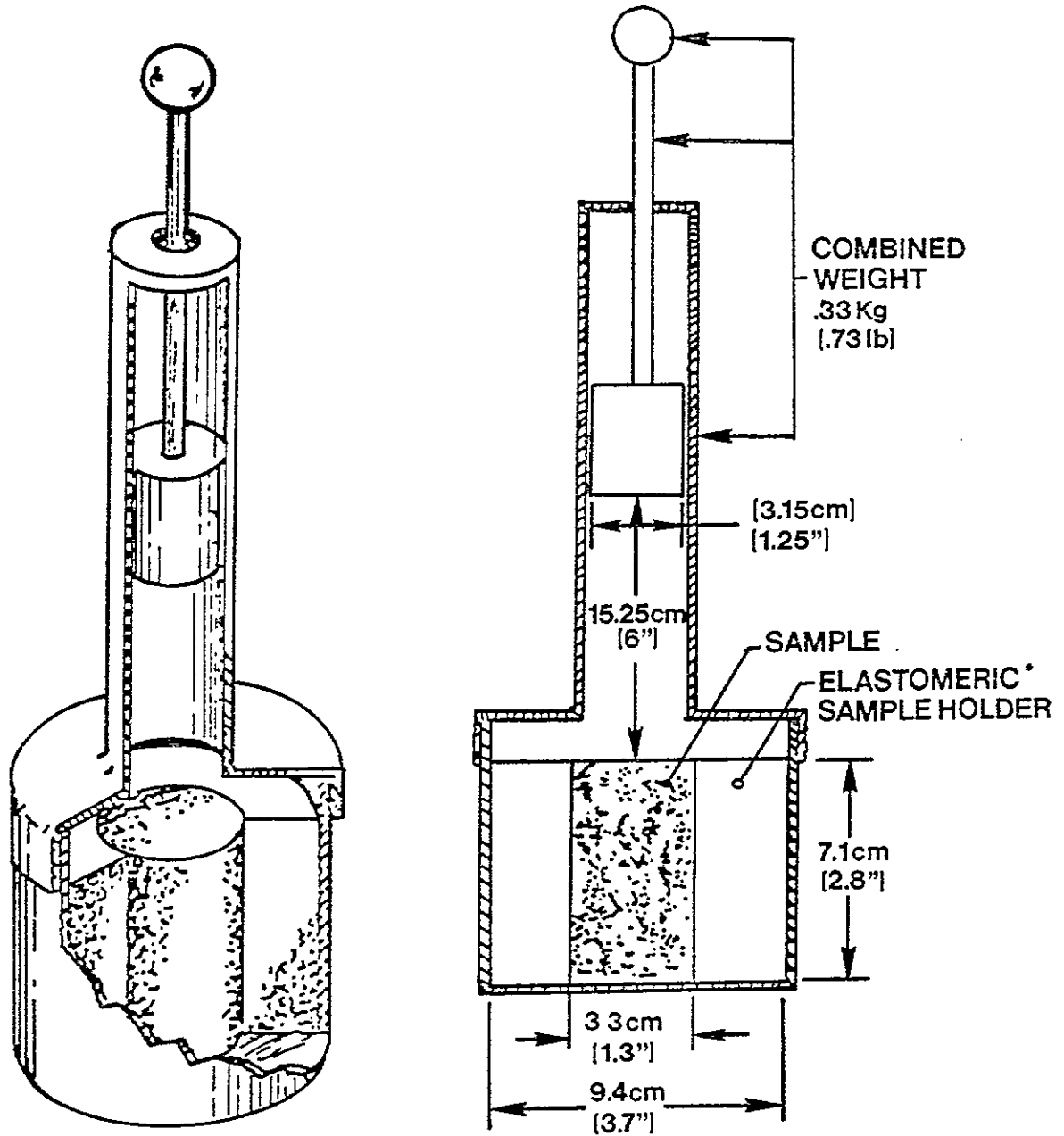
1. The test methods for analyzing the extract are as follows:

(a) For arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, endrin, lindane, methoxychlor, toxaphene, 2,4-D (2,4-dichlorophenoxyacetic acid) or 2,4,5-TP (2,4,5-trichlorophenoxypropionic acid): see SW-846.

(b) (Reserved).

2. For all analyses, the methods of standard addition shall be used for quantification of species concentration.

Figure 1
COMPACTION TESTER



*ELASTOMERIC SAMPLE HOLDER FABRICATED OF MATERIAL FIRM ENOUGH TO SUPPORT THE SAMPLE

APPENDIX III

Chemical Analysis Test Methods

Tables A, B, and C below specify the appropriate analytical procedures, described in EPA's ~~---"Test--Methods--for--Evaluating--Solid--Waste, Physical/Chemical-Methods," (First-and-Second--Edition)~~ SW-846, which shall be used to determine whether a sample contains a given toxic constituent listed in Appendix VII or VIII of these regulations.

Table A identifies each Appendix VII or VIII organic constituent along with the approved measurement method. Table B identifies the corresponding methods for inorganic species. Table C summarizes the contents of SW-846 and supplies specific section and method numbers for sampling and analysis methods.

Prior to final sampling and analysis method selection the analyst should consult the specific section or method described in SW-846 for additional guidance on which of the approved methods should be employed for a specific sample analysis situation.

TABLE A

Analysis Methods for Organic Chemicals Contained in SW-846

Compound	Method Numbers
Acetonitrile	8030,8240
Acrolein	8030,8240
Acrylamide	8015,8240
Acrylonitrile	8030,8240
2-Amino-1-methylbenzene (o-Toluidine)	8250
4-Amino-1-methylbenzene (p-Toluidine)	8250
Aniline	8250
Benzene	8020,8024
Benz(a)anthracene	8100,8250,8310
Benzo(a)pyrene	8100,8250,8310
Benzotrichloride	8120,8250
Benzyl chloride	8120,8250
Benzo(b)fluoranthene	8100,8250,8310
Bis(2-chloroethoxymethane)	8010,8240
Bis(2-chloroethyl)ether	8010,8240
Bis(2-chloroisopropyl)ether	8010,8240
Carbon disulfide	8015,8240
Carbon tetrachloride	8010,8240
Chlordane	8080,8250
Chlorinated biphenyls	8080,8250
Chlorinated dibenzo-p-dioxins	8280
Chlorinated dibenzofurans	8280
Chloroacetaldehyde	8010,8240
Chlorobenzene	8020,8240
Chloroform	8010,8240
Chloromethane	8010,8240
2-Chlorophenol	8040,8250
Chrysene	8100,8250,8310
Creosote*	8100,8250
Cresol(s)	8040,8250
Cresylic Acid(s)	8040,8250
Dichlorobenzene(s)	8010,8120,8250
Dichloroethane(s)	8010,8240
Dichloromethane	8010,8240
Dichlorophenoxyacetic acid	8150,8250
Dichloropropanol	8120,8250
2,4-Dimethylphenol	8040,8250
Dinitrobenzene	8090,8250
4,6-Dinitro-o-cresol	8040,8250
2,4-Dinitrotoluene	8090,8250
2,6-Dinitrotoluene	8060,8250
Endrin	8080,8250
2-Ethoxyethanol	8030,8240
Ethyl ether	8015,8240

* Analyne for phenanthrene and carbazole: if present in a ratio between 1.4:1 and 5:1, creosote should be considered to be present.

TABLE A continued

Analysis Methods for Organic Chemicals Contained in SW-846

Compound	Method Numbers
Ethylene dibromide	8010,8240
Formaldehyde	8015,8240
Formic acid	8250
Heptachlor	8080,8250
Hexachlorobenzene	8120,8250
Hexachlorobutadiene	8120,8250
Hexachloroethane	8010,8240
Hexachlorocyclopentadiene	8120,8250
Lindane	8080,8250
Maleic anhydride	8250
Methanol	8010,8240
Methomyl	8250
Methyl ethyl ketone	8015,8240
Methyl isobutyl ketone	8015,8240
Napthalene	8100,8250
Napthoquinone	8090,8250
Nitrobenzene	8090,8250
4-Nitrophenol	8040,8240
2-Nitropropane	8030,8240
Paraldehyde (trimer of acetaldehyde)	8015,8240
Pentachlorophenol	8040,8250
Phenol	8040,8250
Phorate	8140
Phosphorodithioic acid esters	8140
Phthalic anhydride	8090,8250
2-Picoline	8090,8250
Pyridine	8090,8250
Tetrachlorobenzene(s)	8120,8250
Tetrachloroethane(s)	8010,8240
Tetrachloroethene	8010,8240
Tetrachlorophenol	8040,8250
Toluene	8020,8024
Toluene diisocyanate(s)	8250
Toluenediamine	8250
2,4-Toluenediamine	8250
2,6-Toluenediamine	8250
3,4-Toluenediamine	8250
Toxaphene	8080,8250
Trichloroethane	8010,8240
Trichloroethene(s)	8010,8240
Trichlorofluoromethane	8010,8240
Trichlorophenol(s)	8040,8250
2,4,5-Trichlorophenoxy propionic acid	8150,8250
Trichloropropane	8010,8240
Vinyl chloride	8010,8240
Vinylidene chloride	8010,8240
Xylene	8020,8240

TABLE B

Analysis Methods for Inorganic Chemicals Contained in SW-846

Compound	First Edition Method(s)	Second Edition Method(s)
Antimony	8.50	7040,7041
Arsenic	8.51	7060,7061
Barium	8.52	7080,7081
Cadmium	8.53	7090,7091
Chromium	8.54	7190,7191
Chromium (Hexavalent)	8.545,8.546, and 8.547	7195,7196, and 7197
Cyanides	8.55	9010
Lead	8.56	7420,7421
Mercury	8.57	7470,7471
Nickel	8.58	7520,7521
Selenium	8.59	7740,7741
Silver	8.60	7760,7761
Sulfides	8.67	9030
Total Organic Halogen	8.66	9020

TABLE C

Sampling and Analysis Methods Contained in SW-846

Title	First edition		Second edition	
	Section No.	Method No.	Section No.	Method No.
Sampling of Solid Wastes.....	1.0		1.0	
Development of Appropriate Sampling Plans.....	1.0		1.1	
Regulatory and Scientific Objectives.....	1.0-2		1.1.1	
Fundamental Statistical Concepts.....	1.0-3		1.1.2	
Basic Statistical Strategies.....	1.0-7		1.1.3	
Simple Random Sampling.....			1.1.3.1	
Stratified Random Sampling.....			1.1.3.2	
Systematic Random Sampling.....			1.1.3.3	
Special Considerations.....	1.0-7			
Composite Sampling.....			1.1.4.1	
Subsampling.....			1.1.4.2	
Cost and Loss Functions.....			1.1.4.3	
Implementation of Sampling Plan.....	1.0-7		1.2	
Selection of Sampling Equipment.....			1.2.1	
Composite Liquid Waste Sampler.....	3.2.1		1.2.1.1	
Weighted Bottle.....	3.2.2		1.2.1.2	
Dipper.....	3.2.3		1.2.1.3	
Trier.....	3.2.4		1.2.1.4	
Trier.....	3.2.5		1.2.1.5	
Auger.....	3.2.6		1.2.1.6	
Scoop and Shovel.....	3.2.7		1.2.1.7	
Selection of Sample Containers.....	3.3		1.2.2	
Processing and Storage of Samples.....	3.3		1.2.3	
Documentation of Chain of Custody.....	2.0		1.3	
Sample Labels.....	2.0-1		1.3.1	
Sample Seals.....	2.0-3		1.3.2	
Field Log Book.....	2.0-5		1.3.3	
Chain-of-Custody Record.....	2.0-6		1.3.4	
Sample Analysis Request Sheet.....	2.0-9		1.3.5	
Sample Delivery to Laboratory.....	2.0-10		1.3.6	
Shipping of Samples.....	2.0-10		1.3.7	
Receipt and Logging of Sample.....	2.0-12		1.3.8	
Assignment of Sample for Analysis.....	2.0-13		1.3.9	
Sampling Methodology.....	3.0		1.4	
Containers.....	3.2-2		1.4.1	
Tanks.....	3.2-2		1.4.2	
Waste Piles.....	3.2-2		1.4.3	
Landfills and Lagoons.....	3.2-2		1.4.4	
Waste Evaluation Procedures.....			2.0	
Characteristics of Hazardous Waste.....			2.1	
Ignitability.....	4.0		2.1.1	
Pensky-Martens Closed-Cup Method.....	4.1		2.1.1	1010
Setafash Closed-Cup Method.....	4.1		2.1.1	1020
Corrosivity.....	5.0		2.1.2	
Corrosivity Toward Steel.....	5.3		2.1.2	1110
Reactivity.....	6.0		2.1.3	
Extraction Procedure Toxicity.....	7.0		2.1.4	
Extraction Procedure Toxicity Test.....	7.1, 7.2, 7.5			
Method and Structural Integrity Test.....	7.4		2.1.4	1310
Sample Workup Techniques.....			4.0	
Inorganic Techniques.....	8.49		4.1	
Acid Digestion for Flame AAS.....	1		4.1	3010
Acid Digestion for Furnace AAS.....	1		4.1	3020
Acid Digestion of Oil, Grease, or Wax.....	8.49-9		4.1	3030
Dissolution Procedure for Oil, Grease or Wax.....	8.49-8			
Alkaline Digestion.....	8.0	8.458	4.1	3080
Organic Techniques.....	8.0		4.2	
Separatory Funnel Liquid-Liquid Extraction.....	9.0	8.1	4.2	3510
Continuous Liquid-Liquid Extraction.....	9.0	9.01	4.2	3520
Acid-Base Cleanup Extraction.....	8.0	8.84	4.2	3530
Soxhlet Extraction.....	8.0	8.86	4.2	3540
Sonication Extraction.....	8.0	8.85	4.2	3550
Sample Introduction Techniques.....			5.0	
Headspace.....	8.0	8.82	5.0	5020
Purge-and-Trap.....	8.0	8.83	5.0	5030

TABLE C continued

Sampling and Analysis Methods Contained in SW-846

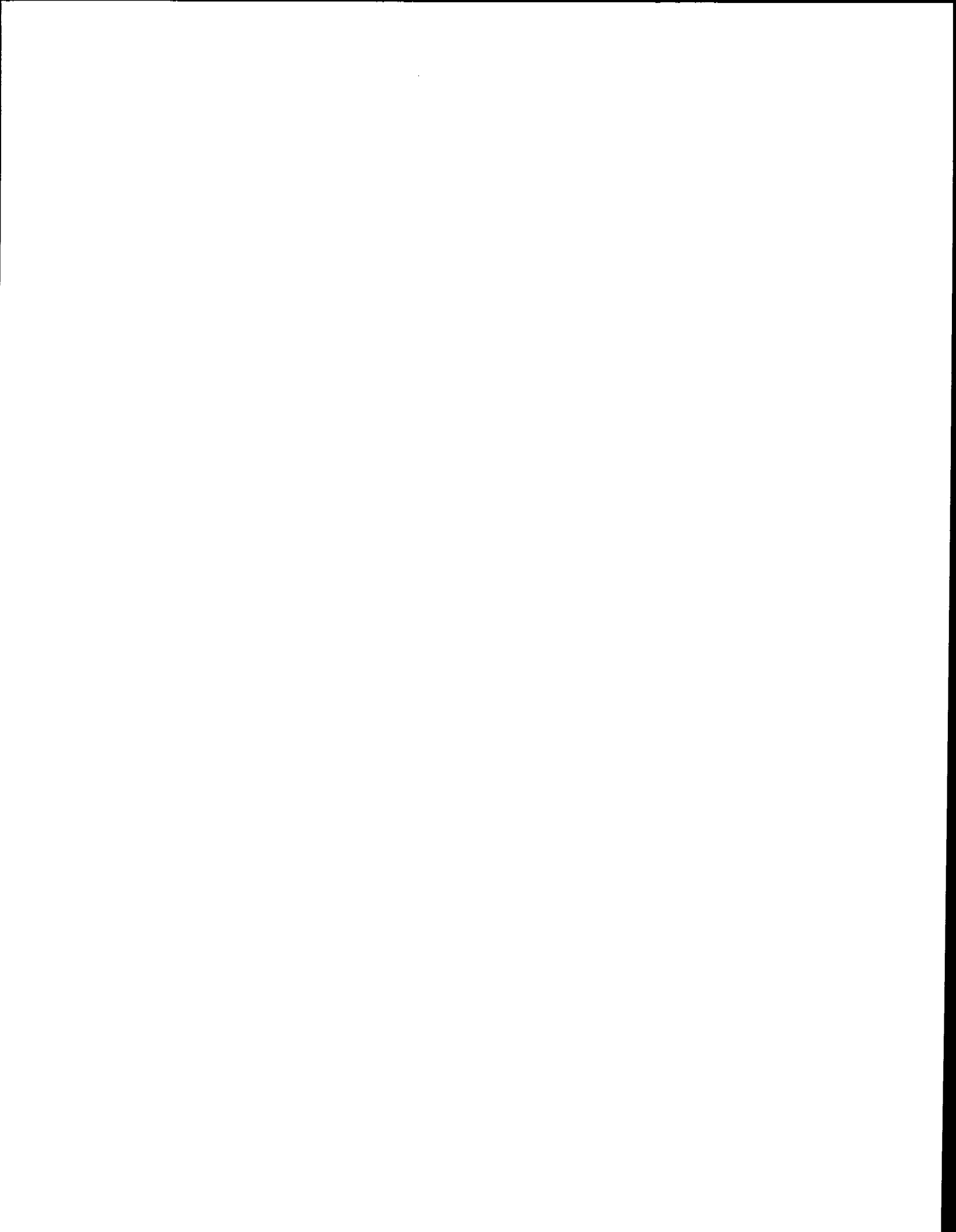
Title	First edition		Second edition	
	Section No.	Method No.	Section No.	Method No.
Inorganic Analytical Methods	8.0		7.0	
Antimony, Flame AAS.....	8.0	8.50	7.0	7470
Antimony, Furnace AAS.....	8.0	8.50	7.0	7471
Arsenic, Flame AAS.....	8.0	8.51	7.0	7060
Arsenic, Furnace AAS.....	8.0	8.51	7.0	7061
Barium, Flame AAS.....	8.0	8.52	7.0	7080
Barium, Furnace AAS.....	8.0	8.52	7.0	7081
Cadmium, Flame AAS.....	8.0	8.53	7.0	7130
Cadmium, Furnace AAS.....	8.0	8.53	7.0	7131
Chromium, Flame AAS.....	8.0	8.54	7.0	7090
Chromium, Furnace AAS.....	8.0	8.54	7.0	7191
Chromium, Hexavalent, Coprecipitation.....	8.0	8.545	7.0	7195
Chromium, Hexavalent, Colorimetric.....	8.0	8.546	7.0	7196
Chromium, Hexavalent, Chelation.....	8.0	8.547	7.0	7197
Lead, Flame AAS.....	8.0	8.56	7.0	7420
Lead, Furnace AAS.....	8.0	8.56	7.0	7421
Mercury, Cold Vapor, Liquid.....	8.0	8.57	7.0	7470
Mercury, Cold Vapor, Solid.....	8.0	8.57	7.0	7471
Nickel, Flame AAS.....	8.0	8.58	7.0	7520
Nickel, Furnace AAS.....	8.0	8.58	7.0	7521
Selenium, Flame AAS.....	8.0	8.59	7.0	7740
Selenium, Gaseous Hydride AAS.....	8.0	8.59	7.0	7741
Silver, Flame AAS.....	8.0	8.60	7.0	7760
Silver, Furnace AAS.....	8.0	8.60	7.0	7761
Organic Analytical Methods.....	8.0		8.0	
Gas Chromatographic Methods.....	8.0		8.1	
Halogenated Volatile Organics.....	8.0	8.01	8.1	8010
Nonhalogenated Volatile Organics.....	8.0	8.01	8.1	8015
Aromatic Volatile Organics.....	8.0	8.02	8.1	8020
Acrolein, Acrylonitrile, Acetonitrile.....	8.0	8.03	8.1	8030
Phenols.....	8.0	8.04	8.1	8040
Phthalate Esters.....	8.0	8.06	8.1	8060
Organochlorine Pesticides and PCBs.....	8.0	8.06	8.1	8060
Nitroaromatics and Cyclic Ketones.....	8.0	8.06	8.1	8090
Polynuclear Aromatic Hydrocarbons.....	8.0	8.10	8.1	8100
Chlorinated Hydrocarbons.....	8.0	8.12	8.1	8120
Organophosphorus Pesticides.....	8.0	8.22	8.1	8140
Chlorinated Herbicides.....	8.0	8.40	8.1	8150
Gas Chromatographic/Mass Spectroscopy Methods (GC/MS).....	8.0		8.2	
GC/MS Volatiles.....	8.0	8.24	8.2	8240
GC/MS Semi-Volatiles, Packed Column.....	8.0	8.25	8.2	8250
GC/MS Semi-Volatiles, Capillary.....	8.0	8.27	8.2	8270
Analysis of Chlorinated Dioxins and Dibenzofurans.....			8.2	8280
High Performance Liquid Chromatographic Methods (HPLC).....	8.0		8.3	
Polynuclear Aromatic Hydrocarbons.....	8.0	8.10	8.3	8310
Miscellaneous Analytical Methods.....	8.0		9.0	
Cyanide; Total and Amenable to Chlorination.....	8.0	8.55	9.0	9010
Total Organic Halogen (TOX).....	8.0	8.66	9.0	9020
Sulfides.....	8.0	8.67	9.0	9030
pH Measurement.....	5.0	5.2	9.0	9040
Quality Control/Quality Assurance.....	10.0		10.1	
Introduction.....	10.0		10.1	
Program Design.....	10.0		10.2	
Sampling.....	10.0		10.3	
Analysis.....	10.0		10.4	
Data Handling.....	10.0		10.5	

APPENDIX IV
Radioactive Waste Test Methods
(Reserved)

APPENDIX V

(Reserved)

APPENDIX VI
Etiologic Agents
(Reserved)



APPENDIX VI
Etiologic Agents
(Reserved)

APPENDIX VII

Basis for Listing Hazardous Waste

EPA Hazardous Waste Number	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-trichlorofluoroethane, 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; and 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 tetra-chlorophenols 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, chlorobenzene, dichlorobenzenes, 1,2,4-trichlorobenzene, tetrachlorobenzene, pentachlorobenzene, hexachlorobenzene, toluene, naphthalene.

APPENDIX VII continued

Basis for Listing Hazardous Waste

EPA Hazardous Waste Number	Hazardous Constituents For Which Listed
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.
K001	Pentachlorophenol, phenol, 2-chlorophenol, p-chloro-m-cresol, 2,4-dimethylphenyl, 2,4-dinitrophenol, trichlorophenols, tetrachlorophenols, 2,4-dinitrophenol, cresosote, 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.

APPENDIX VII continued

Basis for Listing Hazardous Waste

EPA Hazardous Waste Number	Hazardous Constituents For Which Listed
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.

APPENDIX VII continued

Basis for Listing Hazardous Waste

EPA Hazardous Waste Number	Hazardous Constituents For Which Listed
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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, naphthalene, 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.
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.

APPENDIX VII continued

Basis for Listing Hazardous Waste

EPA Hazardous
Waste Number Hazardous Constituents For Which Listed

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, chloro-
 form, phosgene.
K117 Ethylene dibromide.
K118 Ethylene dibromide.
K136 Ethylene dibromide.

APPENDIX VIII

Hazardous Constituents

APPENDIX VIII.—HAZARDOUS CONSTITUENTS

Common name	Chemical abstracts name	Chemical abstracts No.
Acetonitrile	Same	75-05-8
Acetophenone	Ethanone, 1-phenyl	98-86-2
2-Acetylaminofluorene	Acetamide, N-(9H-fluoren-2-yl)	53-96-3
Acetyl chloride	Same	75-36-5
1-Acetyl-2-thiourea	Acetamide, N-(aminothioxy)methyl-	591-08-2
Acrolein	2-Propenal	107-02-8
Acrylamide	2-Propenamde	79-06-1
Acrylonitrile	2-Propenenitrile	107-13-1
Aflatoxins	Aflatoxin	1402-68-2
Aldicarb	Propenal, 2-methyl-2-(methylthio)-, O-[[methylamino]carbonyl]oxime	118-06-3
Aldrin	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)-	309-00-2
Allyl alcohol	2-Propen-1-ol	107-18-6
Allyl chloride	1-Propene, 3-chloro-	107-05-1
Aluminum phosphide	Same	20659-73-8
4-Aminobiphenyl	(1,1'-Bi(phenyl)-4-amine	92-67-1
5-(Aminomethyl)-3-isoxazolol	3(2H)-isoxazolone, 5-(aminomethyl)-	2763-96-4
4-Aminopyridine	4-Pyridineamine	504-24-5
Amtriole	1H-1,2,4-Thiazol-3-amine	61-82-5
Ammonium vanadate	Vanadic acid, ammonium salt	7803-55-6
Aniline	Benzenamine	62-53-3
Antimony and compounds, N.O.S. ¹	Antimony	7440-36-0
Aramite	Sulfurous acid, 2-chloroethyl-, 2-[(4-(1,1-dimethylethyl)phenoxy)-1-methylethyl] ester	140-57-8
Arsenic and compounds, N.O.S. ¹	Arsenic	7440-38-2
Arsenic acid	Arsenic acid AsH ₃ O ₃	7778-39-4
Arsenic pentoxide	Arsenic oxide As ₂ O ₅	1303-28-2
Arsenic trioxide	Arsenic oxide As ₂ O ₃	1327-53-3
Auramine	Benzenamine, 4,4'-carbonimidoylbis(N,N-dimethyl-)	492-80-8
Azaserine	L-Serine, diazoacetate (ester)	115-02-6
Barium and compounds, N.O.S. ¹	Barium	7440-32-3
Barium cyanide	Same	542-62-1
Benz[<i>a</i>]acridine	Same	225-51-4
Benz[<i>a</i>]anthracene	Same	56-55-3
Benzal chloride	Benzene, (dichloromethyl)-	98-87-3
Benzene	Same	71-43-2
Benzenearsonic acid	Arsenic acid, phenyl-	98-05-5
Benzidine	(1,1'-Biphenyl)-4,4'-diamine	92-87-5
Benz[<i>b</i>]fluoranthene	Benz[<i>e</i>]acephenanthrylene	205-99-2
Benz[<i>k</i>]fluoranthene	Same	205-82-3
Benz[<i>a</i>]pyrene	Same	50-32-8
p-Benzquinone	2,5-Cyclohexadiene-1,4-dione	106-51-4
Benzotrifluoride	Benzene, (trichloromethyl)-	98-07-7
Benzyl chloride	Benzene, (chloromethyl)-	100-44-7
Beryllium and compounds, N.O.S. ¹	Beryllium	7440-41-7
Bis(2-chloromethoxy)ethane	Ethane, 1,1'-[methylenebis(oxy)]bis(2-chloro-	111-91-1
Bis(2-chloroethyl) ether	Ethane, 1,1'-oxybis(2-chloro-	111-44-4
Bis(2-chloroisopropyl) ether	Propane, 2,2'-oxybis(2-chloro-	39638-32-9
Bis(chloromethyl) ether	Methane, oxybis(chloro-	542-88-1
Bis(2-ethylhexyl) phthalate	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester	117-81-7
Bromoacetone	2-Propanone, 1-bromo-	599-31-2
Bromoform	Methane, tribromo-	75-25-2
4-Bromophenyl phenyl ether	Benzene, 1-bromo-4-phenoxy	101-55-3
Brucine	Strychnidin-10-one, 2,3-dimethoxy	357-57-3
Butyl benzyl phthalate	1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester	85-88-7
Cascodyic acid	Arsenic acid, dimethyl-	75-80-5
Cadmium and compounds, N.O.S. ¹	Cadmium	7440-43-9
Calcium chromate	Chromic acid, calcium salt	13785-19-0
Calcium cyanide	Same	592-01-8
Carbon disulfide	Carbon bisulfide	75-15-0
Carbon oxyfluoride	Carbonic difluoride	353-50-4
Carbon tetrachloride	Methane, tetrachloro-	56-23-5
Chloral	Acetaldehyde, trichloro-	75-87-6
Chlorambucil	Benzenebutanoic acid, 4-[(bis(2-chloroethyl)amino-	305-03-3
Chlordane, alpha and gamma isomers	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	57-74-9
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		
Chromaphazine	2-Naphthalenamine, N,N-bis(2-chloroethyl)-	494-03-1
Chloroacetaldehyde	Acetaldehyde, chloro-	107-20-0
Chloroalkyl ethers, N.O.S. ¹		
p-Chloroaniline	Benzenamine, 4-chloro-	105-47-8
Chlorobenzene	Benzene, chloro-	108-90-7
Chlorobenzilate	Benzenoacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester	510-15-6
p-Chloro-m-cresol	Phenol, 4-chloro-3-methyl-	58-50-7
1-Chloro-2,3-epoxypropane	Oxirane, (chloromethyl)-	106-89-8

APPENDIX VIII continued

Hazardous Constituents

APPENDIX VIII.—HAZARDOUS CONSTITUENTS—Continued

Common name	Chemical abstracts name	Chemical abstracts No
2-Chloroethyl vinyl ether	Ethene, (2-chloroethoxy)-	110-75-8
Chloroform	Methane, trichloro-	67-66-3
Chloromethyl methyl ether	Methane, chloromethoxy-	107-90-2
beta-Chloronaphthalene	Naphthalene, 2-chloro-	91-58-7
o-Chlorophenol	Phenol, 2-chloro-	95-57-8
1-(o-Chlorophenyl) thiourea	Thiourea, (2-chlorophenyl)-	5344-82-1
Chloroprene	2-Chloro-1,3-butadiene	129-89-9
3-Chloropropionitrile	Propionitrile, 3-chloro-	542-75-7
Chromium and compounds, N.O.S. ¹	Chromium	7440-47-3
Chrysene	Same	218-01-9
Citrus red No. 2	2-Naphthol, 1-[(2,5-dimethoxyphenyl)azo]-	6358-53-8
Coal tars		8005-45-2
Copper cyanide	Copper cyanide CuCN	544-92-3
Cresote	Same	8001-58-9
Cresols (Cresylic acid)	Phenol, methyl-	1318-77-9
Crotonaldehyde	2-Butenal	4170-30-3
Cyanides (soluble salts and complexes) N.O.S. ¹		
Cyanogen	Ethanedinitrile	480-19-5
Cyanogen bromide	Same	506-66-3
Cyanogen chloride	Same	506-77-4
Cyanin	beta-D-Glucopyranoside, (methyl-ONN-azonyl)methyl	14901-08-7
2-Cyclohexyl-4,6-dinitrophenol	Phenol, 2-cyclohexyl-4,6-dinitro-	131-89-5
Cyclophosphamide	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide	50-18-0
2,4-D, salts and esters	Acetic acid, (2,4-dichlorophenoxy)-, salts and esters	94-75-7
Dauromycin	5,12-Naphthacenedione, (8S-cis)-8-acetyl-10-[(3-amino-2,3,8-trideoxy-alpha-L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-	20890-81-3
DDD	Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro-	72-54-8
DDE	Benzene, 1,1'-(dichloroethylenylidene)bis[4-chloro-	72-55-9
DDT	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-	50-29-3
Diallate	Carbamethiolic acid, bis(1-methylethyl-S-(2,3-dichloro-2-propenyl) ester	2903-16-4
Dibenz(a,h)acridine	Same	226-36-8
Dibenz(a,j)acridine	Same	224-42-0
Dibenz(a,h)anthracene	Same	53-70-3
7H-Dibenzo(c,g)carbazole	Same	134-59-2
Dibenz(a,e)pyrene	Naphthal(1,2,3,4-def)chrysene	192-65-4
Dibenz(a,h)pyrene	Dibenzo(b,de)chrysene	180-64-0
Dibenz(a,i)pyrene	Benzo(ghi)perylene	159-55-9
1,2-Dibromo-3-chloropropane	Propane, 1,2-dibromo-3-chloro-	86-12-8
Dibutylphthalate	1,2-Benzenedicarboxylic acid, dibutyl ester	84-74-2
o-Dichlorobenzene	Benzene, 1,2-dichloro-	95-50-1
m-Dichlorobenzene	Benzene, 1,3-dichloro-	541-73-1
p-Dichlorobenzene	Benzene, 1,4-dichloro-	106-46-7
Dichlorobenzene, N.O.S.	Benzene, dichloro-	25321-22-6
3,3'-Dichlorobenzidine	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-	91-94-1
1,4-Dichloro-2-butene	2-Butene, 1,4-dichloro-	764-41-0
Dichlorodifluoromethane	Methane, dichlorodifluoro-	75-71-8
1,2-Dichloroethylene	Ethene, 1,2-dichloro-, (E)-	156-60-5
Dichloroethylene, N.O.S.	Dichloroethylene	25323-30-2
1,1-Dichloroethylene	Ethene, 1,1-dichloro-	75-35-4
2,4-Dichlorophenol	Phenol, 2,4-dichloro-	120-83-2
2,6-Dichlorophenol	Phenol, 2,6-dichloro-	87-65-0
Dichlorophenylamine	Arsenous dichloride, phenyl-	695-26-6
Dichloropropane, N.O.S. ¹	Propane, dichloro-	26638-19-7
Dichloropropanol, N.O.S. ¹	Propanol, dichloro-	26545-73-3
Dichloropropane, N.O.S. ¹	1-Propane, dichloro-	26952-23-8
1,3-Dichloropropane	1-Propane, 1,3-dichloro-	542-75-6
Dechlorin	2,7,3,5-Dimethanonaphth[2,3-b]oxerene, 3,4,5,6,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (alpha,2beta,2alpha,3beta,6beta,6alpha,7beta,7alpha)-	50-57-1
1,2,3,4-Diepoxybutane	2,2'-Bioxirane	1464-53-5
Diethylarsine	Arsine, diethyl-	692-42-2
1,4-Diethylmaleate	1,4-Dioxene	123-91-1
N,N-Diethylhydrazine	Hydrazine, 1,2-diethyl-	1615-80-1
O,O-Diethyl S-methyldithiophosphate	Phosphorodithioic acid, O,O-diethyl S-methyl ester	3288-58-2
Diethyl-p-nitro phenyl phosphate	Phosphoric acid, diethyl 4-nitrophenyl ester	311-45-5
Diethylphthalate	1,2-Benzenedicarboxylic acid, diethyl ester	84-66-2
O,O-Diethyl O-pyrazinyl phosphorothioate	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester	297-97-2
Diethylstilbestrol	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-(E)-	56-53-1
Dihydrostilrole	1,3-Benzodioxole, 5-propyl-	94-58-6
3,4-Dihydroxy-alpha-(methylamino)methyl benzyl alcohol	(+)-1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-	329-65-7
Diisopropylfluorophosphate(DFP)	Phosphorofluoric acid, bis(1-methylethyl) ester	55-91-4
Dimethoate	Phosphorodithioic acid, O,O-dimethyl S-[2-	60-51-5
3,3'-Dimethoxybenzidine	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy-	119-90-4
p-Dimethylaminobenzene	Benzeneamine, N,N-dimethyl-4-(phenylazo)-	60-11-7
7,12-Dimethylbenz(a)anthracene	Benzo(a)anthracene, 7,12-dimethyl-	57-97-6

APPENDIX VIII continued

Hazardous Constituents

APPENDIX VIII.—HAZARDOUS CONSTITUENTS—Continued

Common name	Chemical abstracts name	Chemical abstracts No
3,3'-Dimethylbenzidine	[1,1'-Biphenyl-4,4'-diamine, 3,3'-dimethyl-	119-93-7
Dimethylcarbamoyl chloride	Carbamic chloride, dimethyl-	79-44-7
1,1-Dimethylhydrazine	Hydrazine, 1,1-dimethyl-	57-14-7
1,2-Dimethylhydrazine	Hydrazine, 1,2-dimethyl-	540-73-8
alpha, alpha-Dimethylphenethylamine	Benzeneethanamine, alpha, alpha-dimethyl-	122-39-8
2,4-Dimethylphenol	Phenol, 2,4-dimethyl-	105-87-9
Dimethylphthalate	1,2-Benzenedicarboxylic acid, dimethyl ester	131-11-3
Dimethyl sulfate	Sulfuric acid, dimethyl ester	77-78-1
Dinitrobenzene, N.O.S. ¹	Benzene, dinitro-	25154-64-5
4,6-Dinitro-o-cresol and salts	Phenol, 2-methyl-4,6-dinitro- and salts	534-52-1
2,4-Dinitrophenol	Phenol, 2,4-dinitro-	51-28-5
2,4-Dinitrotoluene	Benzene, 1-methyl-2,4-dinitro-	121-14-2
2,6-Dinitrotoluene	Benzene, 2-methyl-1,3-dinitro-	606-20-2
Dinoseb	Phenol, 2-(3-methylpropyl)-4,6-dinitro-	83-85-7
Di-n-octylphthalate	1,2-Benzenedicarboxylic acid, dioctyl ester	117-84-0
Diphenylamine	Benzeneamine, N-phenyl-	122-39-4
1,2-Diphenylhydrazine	Hydrazine, 1,2-diphenyl-	122-66-7
Di-n-propylnitrosamine	1-Propenamine, N-nitroso-N-propyl-	621-64-7
Dioxiflon	Phosphorodithioic acid, O,O-dialkyl S-(2-(ethylthio)ethyl) ester	298-04-4
Dithioburet	Thioimidodicarbonic diamide	541-63-7
Endosulfan	6,9-Methano-2,4,3-benzodioxathiopen, 6,7,8,9,10,10-hexachloro-1,5,5a,5,9,9a-hexahydro-3-oxide	115-29-7
Endothal	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid	145-73-3
Endrin	2,7,3,6-Dimethanonaphth[2,3-b]oxirane, 3,4,5,6,8,9-hexachloro-1a,2,2a,3,5,6a,7,7a-octahydro-, (alpha,2beta,2abeta,5alpha,5alpha,6abeta,7beta,7alpha)-	72-20-8
Ethyl carbamate (urethane)	Carbamic acid, ethyl ester	51-79-8
Ethyl cyanide	Propenenitrile	107-12-0
Ethylenebisdithiocarbamic acid, salts and esters	Carbamodithioic acid, 1,2-ethanedithio-, salts and esters	111-54-6
Ethylene dibromide	Ethane, 1,2-dibromo-	106-93-4
Ethylene dichloride	Ethane, 1,2-dichloro-	107-06-2
Ethylene glycol monoethyl ether	Ethanol, 2-ethoxy-	110-80-5
Ethylenimine	Aziridine	151-56-4
Ethylene oxide	Oxirane	75-21-8
Ethylenethiourea	2-imidazolidinethione	96-45-7
Ethylidene dichloride	Ethane, 1,1-dichloro-	75-34-3
Ethyl methacrylate	2-Propenoic acid, 2-methyl-, ethyl ester	87-53-2
Ethylmethane sulfonate	Methanesulfonic acid, ethyl ester	62-50-0
Famphur	Phosphorothioic acid, O-[4-[(dimethylamino) sulfonyl] phenyl] O,O-dimethyl ester	52-85-7
Fluoranthene	Same	206-44-0
Fluorine	Same	7782-41-4
Fluoroacetamide	Acetamide, 2-fluoro-	640-19-7
Fluoroacetic acid, sodium salt	Acetic acid, fluoro-, sodium salt	62-74-8
Formaldehyde	Same	50-00-0
Glycidylaldehyde	Oxiranecarboxaldehyde	765-34-4
Halomethane, 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
Heptachlor epoxide	2,5-Methano-2H-indeno[1,2b]oxirane, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a-hexahydro-alpha, beta and gamma isomers	1024-67-3
Hexachlorobenzene	Benzene, hexachloro-	118-74-1
Hexachlorobutadiene	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	87-66-9
Hexachlorocyclopentadiene	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	77-47-4
Hexachlorobenzofuran		
Hexachloroethane	Ethane, hexachloro-	67-72-1
Hexachlorophene	Phenol, 2,2'-methylenebis[3,4,6-trichloro-	70-30-4
Hexachloropropene	1-Propene, hexachloro-	1698-71-7
Hexaethyltetraphosphate	Tetraphosphoric acid, hexaethyl ester	757-58-4
Hydrazine	Same	302-01-2
Hydrogen cyanide	Hydrocyanic acid	74-90-8
Hydrogen fluoride	Hydrofluoric acid	7664-39-3
Hydrogen sulfide	Same	7783-06-4
Indeno[1,2,3cd]pyrene	Same	123-39-5
Iron dextran	Same	9004-66-4
Isobutyl alcohol	1-Propanol, 2-methyl-	78-83-1
Isodrin	1,4,5,6-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-1-alpha,4-alpha,4abeta,5beta,5beta,6abeta-	
Isosafrole	1,3-Benzodioxole, 5-(1-propenyl)-	120-56-1
Kepon	1,3,4-Methano-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-	143-50-0
Leucopine	2-Butenoic acid, 2-methyl-, 7-[(2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutyl)amino]-2,3,5,7a-tetrahydro-1H-pyrrolo[2,1-b] ester, [1S-[1alpha(2),7(2a,3R),7alpha]]-	903-34-4
Lead and compounds, N.O.S. ¹		7430-92-1
Lead acetate	Acetic acid, lead(2+) salt	901-04-2
Lead phosphate	Phosphoric acid, lead(2+) salt	7446-27-7
Lead subacetate	Lead, bis(acetato-O)tetrahydroxytri-	1335-32-8
Lindane	Cyclohexane, 1,2,3,4,5,6-hexachloro-	56-89-9
Maleic anhydride	2,5-Furandione	108-31-6
Maleic hydrazide	3,6-Pyridinedione, 1,2-dihydro-	123-33-1
Malononitrile	Propenedinitrile	109-77-3

APPENDIX VIII continued

Hazardous Constituents

APPENDIX VIII.—HAZARDOUS CONSTITUENTS—Continued

Common name	Chemical abstracts name	Chemical abstracts No.
Meibohlan	L-Phenylisoline, 4-[bis(2-chloroethyl)amino]	148-82-3
Mercury fulminate	Fulminic acid, mercury(2+) salt	628-86-4
Mercury and compounds N.O.S. ¹	Same	7439-97-6
Methacrylonitrile	2-Propenenitrile, 2-methyl	126-98-7
Methapyrone	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)	91-80-5
Methomyl	Acetic acid, N-[(methylcarbamoyloxy)thio], methyl ester	18752-77-5
Methoxychlor	Benzene, 1,1'-(2,2,2-trichloroethylidene)[4-methoxy	72-43-5
Methyl bromide	Methane, bromo-	74-83-9
Methyl chloride	Methane, chloro-	74-87-3
Methylchlorocarbonate	Carbonic acid, methyl ester	79-22-1
Methyl chloroform	Ethane, 1,1,1-trichloro-	71-55-6
3-Methylcholanthrene	Benz[<i>h</i>]acanthrene, 1,2-dihydro-3-methyl-	58-49-5
4,4'-Methylenebis(2-chloroaniline)	Benzenamine, 4,4'-methylenebis(2-chloro-	101-14-4
Methylene bromide	Methane, dibromo-	74-95-3
Methylene chloride	Methane, dichloro-	75-09-2
Methyl ethyl ketone (MEK)	2-Butanone	78-93-3
Methyl ethyl ketone peroxide	2-Butanone, peroxide	1398-23-4
Methyl hydrazine	Hydrazine, methyl-	60-34-4
Methyl iodide	Methane, iodo-	74-88-4
Methyl isocyanate	Methane, isocyanato-	524-83-9
2-Methylacetonitrile	Propanenitrile, 2-hydroxy-2-methyl-	75-85-5
Methyl methacrylate	2-Propenoic acid, 2-methyl-, methyl ester	80-82-6
Methyl methanesulfonate	Methanesulfonic acid, methyl ester	96-27-3
Methyl parathion	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester	295-00-0
Methylthioureasol	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thio-	56-04-2
Mitomycin C	Azino[2,3:3',4']pyrido[1,2-a] indole-4,7-dione, 6-amino-8-[[[(aminocarbonyloxy)methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-6-methyl-1,1aR-5a,6a,7beta,8a,8a,9beta,9beta]]-	50-07-7
MNNG	Guanidine, N-methyl-N'-nitro-N-nitroso-	70-25-7
Mustard gas	Ethane, U'-thio[2-chloro-	505-80-2
Naphthalene	Same	91-20-3
1,4-Naphthoquinone	1,4-Naphthalenedione	130-15-4
alpha-Naphthylamine	1-Naphthalenamine	134-32-7
beta-Naphthylamine	2-Naphthalenamine	91-59-8
alpha-Naphthylthioureas	Thioureas, 1-naphthyl-	86-88-4
Nickel and compounds, N.O.S. ¹	Same	7440-02-0
Nickel carbonyl	Nickel carbonyl, (T-4)	13463-39-3
Nickel cyanide	Same	557-19-7
Nicotine and salts	Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts	54-11-5
Nitric oxide	Nitrogen oxide NO	10102-43-9
p-Nitroaniline	Benzenamine, 4-nitro-	100-01-6
Nitrobenzene	Benzene, nitro-	98-95-3
Nitrogen dioxide	Nitrogen oxide NO ₂	10102-44-0
Nitrogen mustard and hydrochloride salt	Ethanamine, 2-chloro-, N-(2-chloroethyl)-N-methyl-, and hydrochloride salt	51-75-2
Nitrogen mustard N-oxide and hydrochloride salt	Ethanamine, 2-chloro-N-(2-chloroethyl)-N-methyl-, N-oxide, and hydrochloride salt	126-85-2
Nitroglycann	1,2,3-Propanetriol, trinitrate	56-83-0
p-Nitrophenol	Phenol, 4-nitro-	100-02-7
2-Nitropropane	Propane, 2-nitro-	79-46-8
4-Nitroquinoline-1-oxide	Quinoline, 4-nitro-1-oxide	58-57-5
Nitrosamine, N.O.S. ¹	Same	35576-91-1
N-Nitrosod-n-butylamine	1-Butanamine, N-butyl-N-nitroso-	924-16-3
N-Nitrosodethanolamine	Ethanol, 2,2-(nitrosomino)bis-	1116-54-7
N-Nitrosodethylamine	Ethanamine, N-ethyl-N-nitroso-	55-15-5
N-Nitrosodimethylamine	Methanamine, N-methyl-N-nitroso-	62-75-9
N-Nitroso-N-ethyl urea	Urea, N-ethyl-N-nitroso-	759-73-9
N-Nitrosomethylethylamine	Ethanamine, N-methyl-N-nitroso-	10595-85-6
N-Nitroso-N-methylurea	Urea, N-methyl-N-nitroso-	984-03-5
N-Nitroso-N-methylurethane	Carbamic acid, methyl nitroso-, ethyl ester	615-63-2
N-Nitrosomethylmethylamine	Vinylamine, N-methyl-N-nitroso-	4540-40-0
N-Nitrosomorpholine	Morpholine, N-nitroso-	59-89-2
N-Nitrosomorpholine	Pyridine, 3-(1-nitroso-2-pyrrolidinyl)-, (S)-	16543-55-8
N-Nitrosopiperidine	Piperidine, 1-nitroso-	100-75-4
Nitrosopyrrolidine	Pyrrolidine, 1-nitroso-	930-55-2
N-Nitrososarcosine	Glycine, N-methyl-N-nitroso-	13255-22-9
5-Nitro-o-toluidine	Benzenamine, 2-methyl-5-nitro-	99-56-8
Octamethylpyrophosphoramide	Diphosphoramide, octamethyl-	152-15-9
Osmium tetroxide	Osmium oxide (OsO ₄)	20818-12-0
Paraldehyde	1,3,5-Trioxane, 2,4,6-trimethyl-	123-53-7
Parathion	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester	56-38-2
Pentachlorobenzene	Benzene, pentachloro-	608-93-5
Pentachlorodibenzo-p-dioxins	Same	
Pentachlorodibenzofurans	Same	
Pentachloroethane	Ethane, pentachloro-	76-01-7
Pentachloronitrobenzene (PCNB)	Benzene, pentachloronitro-	82-68-6
Pentachlorophenol	Phenol, pentachloro-	87-86-5
Phenacetic	Acetic acid, N-(4-ethoxyphenyl)-	82-44-2
Phenol	Same	108-95-2
Phenylacetamide	Benzenediamine	25265-76-3
Phenylmercury acetate	Mercury, (acetato-O)phenyl-	82-38-4
Phenylthioureas	Thioureas, phenyl-	103-85-5
Phosgene	Carbonic dichloride	75-44-5
Phosphine	Same	7803-51-2
Phorate	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester	298-02-2
Phthalic acid esters, N.O.S. ¹	Same	

APPENDIX VIII continued

Hazardous Constituents

APPENDIX VIII.—HAZARDOUS CONSTITUENTS—Continued

Common name	Chemical abstracts name	Chemical abstracts No.
Phthalic anhydride.....	1,3-Isobenzofurandione.....	85-44-9
2-Picoline.....	Pyridine, 2-methyl.....	109-06-3
Polychlorinated biphenyls N.O.S. ¹	Same.....	151-50-8
Potassium cyanide.....	Argentate(1-), bis(cyano-O), potassium.....	506-61-6
Potassium silver cyanide.....	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propenyl).....	23950-58-5
Propamide.....	1,2-Oxathiolane, 2,2-dioxide.....	1130-71-4
1,3-Propane sultone.....	1-Propanamine.....	107-10-8
n-Propylamine.....	2-Propen-1-ol.....	107-19-7
Propargyl alcohol.....	Propane, 1,2-dichloro.....	78-87-5
Propylene dichloride.....	Azidine, 2-methyl.....	75-55-8
1,2-Propyleneimine.....	4(1H)-Pyrimidinone, 2,3-dihydro-6-propyl-2-thiozo.....	51-52-5
Propylthioureasil.....	Same.....	110-86-1
Pyridine.....	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyloxy)], methyl ester.....	50-55-5
Risperinen.....	1,3-Benzenediol.....	108-46-3
Riocerinol.....	1,2-Benzodioxol-3(2H)-one, 1,1-dioxide and salts.....	81-07-2
Saccharin and salts.....	1,3-Benzodioxole, 5-(2-propenyl)-.....	94-59-7
Salicin.....	Selenious acid.....	7783-00-8
Selenium dioxide.....	Selenium.....	7782-49-2
Selenium and compounds, N.O.S. ¹	Same.....	7446-34-6
Selenium sulfide.....	Same.....	630-10-4
Selenourea.....	Same.....	7440-22-4
Silver and compounds, N.O.S. ¹	Silver.....	506-64-9
Silver cyanide.....	Same.....	93-72-1
Silvex (2,4,5-TP).....	Propanoic acid, 2-(2,4,5-trichlorophenyl)-.....	143-33-9
Sodium cyanide.....	Same.....	18883-66-4
Streptozotocin.....	D-Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-.....	1314-96-1
Stroctum sulfide.....	Same.....	57-24-9
Styrycholine and salts.....	Styrychidin-10-one and salts.....	1746-01-6
TCDD.....	Dibenzo[b,e] [1,4]dioxin, 2,3,7,8-tetrachloro.....	95-94-3
1,2,4,5-Tetrachlorobenzene.....	Benzene, 1,2,4,5-tetrachloro.....	25322-20-7
Tetrachloro-dibenzo-p-dioxins.....	Ethane, tetrachloro, N.O.S.....	630-20-6
Tetrachloro-dibenzofurans.....	Ethane, 1,1,1,2-tetrachloro.....	79-34-5
Tetrachloroethane, N.O.S. ¹	Ethane, 1,1,2,2-tetrachloro.....	127-18-4
1,1,1,2-Tetrachloroethane.....	Ethane, tetrachloro.....	58-90-2
1,1,2,2-Tetrachloroethane.....	Phenol, 2,3,4,6-tetrachloro.....	3689-24-5
Tetrachloroethylene.....	Thiodi-phosphoric acid, tetraethyl ester.....	78-00-2
2,3,4,6-Tetrachlorophenol.....	Tetraethyl lead.....	107-49-3
Tetraethylthiopyrophosphate.....	Diphosphoric acid, tetraethyl ester.....	509-14-8
Tetraethyl lead.....	Methane, tetranitro.....	7440-26-0
Tetraethylpyrophosphate.....	Thallium.....	1314-32-5
Tetranitromethane.....	Thallium (III) oxide.....	563-88-8
Thallium and compounds, N.O.S. ¹	Acetic acid, thallium(1+) salt.....	6533-73-9
Thalic acid.....	Carbonic acid, dithallium(1+) salt.....	7791-12-0
Thallium (I) acetate.....	Thallium chloride.....	10102-45-1
Thallium (I) carbonate.....	Neric acid, thallium(1+) salt.....	12039-52-0
Thallium (I) chloride.....	Thallium selenide.....	10031-59-1
Thallium (I) nitrate.....	Sulfuric acid, thallium salt.....	62-55-5
Thallium selenite.....	Ethanethioamide.....	39196-18-4
Thallium (I) sulfate.....	2-Butanone, 3,3-dimethyl-1-(methylthio)-O-[(methylamino)carbonyl]acame.....	74-93-1
Thioacetamide.....	Methanethiol.....	108-96-5
Thiofancx.....	Benzenethiol.....	79-19-6
Thiomethanol.....	Thiosemicarbazide.....	62-56-6
Thiophenol.....	Thiourea.....	137-26-8
Thiosemicarbazide.....	Thioperoxydicarbonyl diimide, Tetramethyl.....	106-84-3
Thiourea.....	Same.....	25375-45-8
Thiram.....	Benzene, methyl.....	95-80-7
Toluene.....	Benzenediamine, ar-methyl.....	823-40-5
Toluenediamine.....	1,3-Benzenediamine, 4-methyl.....	496-72-0
2,4-Toluenediamine.....	1,3-Benzenediamine, 2-methyl.....	584-84-9
2,6-Toluenediamine.....	1,2-Benzenediamine, 4-methyl.....	106-49-0
3,4-Toluenediamine.....	Benzene, 2,4-dicyanato-1-methyl.....	636-21-5
Toluene dicyanate.....	Benzenamine, 4-methyl.....	8001-35-2
p-Toluidine.....	Benzenamine, 2-methyl, hydrochloride.....	120-82-1
o-Toluidine hydrochloride.....	Same.....	79-00-5
Toxaphene.....	Benzene, 1,2,4-trichloro.....	79-01-6
1,2,4-Trichlorobenzene.....	Ethane, 1,1,2-trichloro.....	75-70-7
1,1,2-Trichloroethane.....	Ethane, trichloro.....	75-69-4
Trichloroethylene.....	Methanethiol, trichloro.....	95-95-4
Trichloromethanethiol.....	Methane, trichlorofluoro.....	85-06-2
Trichloromethoxyfluoromethane.....	Phenol, 2,4,6-trichloro.....	93-76-5
2,4,5-Trichlorophenol.....	Phenol, 2,4,6-trichloro.....	95-18-4
2,4,6-Trichlorophenol.....	Acetic acid, (2,4,5-trichlorophenoxy)-.....	126-68-1
2,4,5-T.....	Propene, 1,2,3-trichloro.....	99-35-4
Trichloropropane, N.O.S. ¹	Phosphorothioic acid, O,O,O-trimethyl ester.....	52-24-4
1,2,3-Trichloropropane.....	Benzene, 1,3,5-trinitro.....	126-72-7
O,O,O-Triethylphosphorothioate.....	Azidine, 1,1',1''-phosphorothioylidene.....	72-57-1
sym-Trinitrobenzene.....	1-Propanol, 2,3-dibromo-, phosphate (3:1).....	66-75-1
Tri(1-aziridinyl)phosphine sulfide.....	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl[1,1'-biphenyl]-4,4'-diyl)bis(azo)]bis[5-amino-4-hydroxy-, tetrasodium salt.....	2056-25-0
Tri(2,3-dibromopropyl)phosphate.....	2,4(1H,3H)-Pyrimidinone, 5-[bis(2-chloroethylamino)-.....	1314-82-1
Trypan blue.....	Undecamethylenediamine, N,N'-bis(2-chlorobenzyl)-, dihydrochloride.....	75-01-4
Uracil mustard.....	Vanadium oxide V ₂ O ₅	81-81-2
Same as CAS name.....	Ethane, chloro.....	557-21-1
Vanadium pentoxide.....	2-H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-.....	1314-84-7
Vinyl chloride.....	Same.....	
Warfarin.....	Zinc phosphide P ₂ Zn.....	
Zinc cyanide.....		
Zinc phosphide.....		

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

Uniform Hazardous Waste Manifest

The director hereby adopts and incorporates by reference 40 C.F.R. Part 262, Appendix - Uniform Hazardous Waste Manifest and instructions, as published in ~~the Federal Register on July 15, 1985~~ 50 F.R. 28742 (July 15, 1985), as amended by 51 F.R. 35192 (October 1, 1986).

Wherever the term Administrator or Regional Administrator is used, the term shall have the meaning of the director of the Department of Natural Resources.

Wherever the term Environmental Protection Agency or EPA is used, the term shall have the meaning of the West Virginia Department of Natural Resources.

APPENDIX X

Record Keeping Instructions

The record keeping provisions of Section 8.5.4 of these regulations 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 Section 8.5.4.b of these regulations for additional record keeping 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:

1. Records of each hazardous waste received, treated, stored, or disposed of at the facility which include the following:

(a) A description by its common name and the EPA Hazardous Waste Number(s) from Section 3 of these regulations 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 Section 3.4 of these regulations, the description also must include the process that produced it (for example, solid filter cake from production of _____; EPA Hazardous Waste Number W051).

Each hazardous waste listed in Section 3.4 of these regulations and each hazardous waste characteristic defined in Section 3.8 of these regulations has a four-digit EPA Hazardous Waste Number assigned to it. This number must be used for record keeping 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 EPA Hazardous Waste Numbers.

(b) The estimated or manifest-reported weight, or volume and density, where applicable, in one of the units of measure specified in Table D.

(c) The method(s) (by handling code(s) as specified in Table E) and date(s) of treatment storage, or disposal.

TABLE D

Units of Measure

Unit of Measure	Symbol	Density
Pounds	P	
Short tons (2,000 lbs)	T	
Gallons (U.S.)	G	P/G
Cubic yards	Y	T/Y
Kilograms	K	
Tonnes (1,000 kg)	M	
Liters	L	K/L
Cubic meters	C	M/C

Single digit symbols are used here for data processing purposes.

TABLE E

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 Other (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
- T16 Cement kiln
- T17 Lime kiln
- 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

(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)

(iii) Biological Treatment

- T67 Activated sludge
- T68 Aerobic lagoon
- T69 Aerobic tank
- T70 Anaerobic lagoon
- T71 Composting
- T72 Septic tank
- T73 Spray irrigation
- T74 Thickening filter
- T75 Trickling filter
- T76 Waste stabilization pond
- T77 Other (specify)
- T78-79 (Reserved)

3. Disposal

D80 .Underground injection

D81 Landfill

D82 Land treatment

D83 Ocean disposal

D84 Surface impoundment (to be closed as a landfill)

D85 Other (specify)

APPENDIX XI

Cochran's Approximation to the Behrens-Fisher Student's T-test

Using all the available background data (n readings), calculate the background mean (\bar{X}) and background variance (s^2). For the single monitoring well under investigation (n reading), calculate the monitoring mean (\bar{X}) and monitoring variance (s^2).

For any set of data (X_1, X_2, \dots, X_n) the mean is calculated by:

$$\bar{X} = \frac{X_1 + X_2 + \dots + X_n}{n}$$

and the variance is calculated by:

$$s^2 = \frac{(X_1 - \bar{X})^2 + (X_2 - \bar{X})^2 + \dots + (X_n - \bar{X})^2}{n - 1}$$

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). The t^* value is compared to the t 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:

$$t^* =$$

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-statistics (t), against which t^* will be compared necessitates finding t and t from standard (one-tailed) tables where,

$$t = t\text{-tables with } (n - 1) \text{ degrees of freedom, at the 0.05 level of significance.}$$

$$t = t\text{-tables with } (n - 1) \text{ degrees of freedom, at the 0.05 level of significance.}$$

Finally, the special weightings W_1 and W_2 are defined as:

and so the comparison t-statistic is:

The t-statistic (t^*) is now compared with the comparison t-statistic (t) using the following decision-rule:

If t^* is equal to or larger than t , then conclude that there most likely has been a significant increase in this specific parameter.

If t^* is less than t , 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 for pH and similar monitoring parameters.

If t^* is equal to or larger than t , 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 , 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.

TABLE F
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

Adopted from Table III of "Statistical Tables for Biological, Agricultural, and Medical Research," R. A. Fisher and F. Yates, 1947.

APPENDIX XII

Mann-Whitney Test

The Mann-Whitney test is a non-parametric statistical method which is described in the following tests:

"Statistical Methods," G. W. Snedecor & W. G. Cochran, 6th Edition, 1967, the Iowa State University Press, Ames, Iowa, pp. 130-131.

"Elementary Statistics and Decision Making," S. J. Armore, 1973, Charles E. Merrill Publishing Company, Columbus, Ohio, pp. 251-252.

PREAMBLE TO PROPOSED AMENDMENTS
TO LEGISLATIVE RULES CONCERNING
HAZARDOUS WASTE MANAGEMENT

FILED
NOV 01 1987 11:36

REGULATIONS: Department of Natural Resources, Series 35, Hazardous Waste Management Regulations

AUTHORITY: West Virginia Code Sections 20-5E-4 through 20-5E-7

ACTION: Proposed Rule; Notice of Hearing and Comment Period

SUMMARY: Effective May 29, 1986, West Virginia received authorization from the United States Environmental Protection Agency (EPA) to administer federal RCRA Subtitle C hazardous waste management regulations. An authorized state is required to modify its program to comply with federal regulatory changes, within one year after promulgation, in order to retain authorization. Today's filing concerns the proposed amendment of legislative rules in order to incorporate federal regulatory changes promulgated between July 1, 1986 and June 30, 1987 (Cluster 3).

DATES: A public hearing on this proposal will be held at 10:00 a.m. on Monday, November 8, 1987 in the Director's Conference Room 674, 1800 Washington Street, East, Charleston, West Virginia. Written comments will be received until 4:30 p.m. on Monday, November 9, 1987.

CONTACT: For further information regarding this filing, please contact Ms. Cecelia G. Jarrell, WV Department of Natural Resources, 1800 Washington Street, East, Charleston, West Virginia 25305, telephone (304) 348-2761.

SUPPLEMENTAL INFORMATION: Today's filing proposes the amendment of current State regulations to incorporate federal revisions of hazardous waste management regulations made between July 1, 1986 and June 30, 1987, revisions referred to by the EPA as non-HSWA Cluster 3 revisions.

Today's proposal includes the following amendments to Series 35:

Series 35 Section	Description of Text Revision
1.5 Incorporation by Reference	Inserts new date (date of promulgation of legislatively-authorized rule) in place of May 13, 1987 to bring federal statute and regulation citations up to date.

Series 35 Section	Description of Text Revision
2 Definitions	Inserts definitions for the following terms: Aboveground Tank, Ancillary Equipment, Component, Corrosion Expert, Existing Tank System, Inground Tank, Installation Inspector, Leak-Detection System, New Tank System, Onground Tank, Sump, SW-846, Tank System, Underground Tank, Unfit-For-Use Tank System, and Zone Of Engineering Control.
3.1.4 Exclusions	Adds new Section 3.1.4.a.8.
3.4.2 Hazardous Waste from Nonspecific Sources	Places existing text into a new Table III. Revises description of waste numbers F001 through F005 (See explanation below).
3.4.3 Hazardous Waste from Specific Sources	Places existing text into a new Table IV.
3.4.4.e ("P" wastes)	Replaces old list with a new Table V which contains additional information under the heading "Chemical Abstracts No."
3.4.4.f ("U" wastes)	Replaces old list with a new Table VI which contains additional information under the heading "Chemical Abstracts No."
6.3.5 Accumulation Time	Deletes old text and inserts new Sections 6.3.5.a and 6.3.5.a.1.
8.2.6 General Inspection Requirements	Deletes old text and inserts new Section 8.2.6.b.4.
8.5.4 Operating Record	Deletes old text and inserts new Section 8.5.4.b.6.
8.6.1 Applicability	Adds new Section 8.6.1.b.3.
8.8 Tanks	Deletes old text and replaces it with a new and expanded Section 8.8.
10.1.3 Accumulation Time	Deletes old text and inserts new Section 10.1.3.

Series 35 Section	Description of Text Revision
11.3.3 Changes During Interim Status	Addition of new Section 11.3.3.f.
11.5.1 General Information Requirements	Changes in cross-reference citations in Section 11.5.1.e and changes of cross- reference citation and addition of a citation to APCC regulations.
11.5.2 Specific Information Requirements	Deletes old text and inserts a new and expanded Section 11.5.2.b.
Appendix I Representative Sampling Methods	Updates citation to EPA Publication SW-846.
Appendix VIII Hazardous Constituents	Replaces old Appendix with new listings containing additional information.
Appendix IX Uniform Hazardous Waste Manifest	Amends the citation to the Uniform Hazardous Waste Manifest to its most current form.

A comparison of amended state regulatory provisions and the Cluster 3 revisions follows:

Series 35 Section	40 C.F.R. Section	Date of Federal Revision
2	260.10	7/14/86
3.1.4.a	261.4	7/14/86
3.4.4.e	261.33(e)	8/6/86
3.4.4.f	261.33(f)	8/6/86
6.3.5	262.34	7/14/86
8.2.6.b.4	264.15	7/14/86
8.5.4.b.6	264.73	7/14/86
8.6.1.b.3	264.110	7/14/86
8.8.1	264.190	7/14/86
8.8.2	264.191	7/14/86
8.8.3	264.192	7/14/86
8.8.4	264.193	7/14/86
8.8.5	264.194	7/14/86
8.8.6	264.195	7/14/86
8.8.7	264.196	7/14/86

Series 35 Section	40 C.F.R. Section	Date of Federal Revision
8.8.8	264.197	7/14/86
8.8.9	264.198	7/14/86
8.8.10	264.199	7/14/86
10.1.3	262.34	7/14/86
11.3.3.f	270.72(e)	7/14/86
11.5.1.e	270.14(b)(5)	7/14/86
11.5.1.n	270.14(b)(13)	7/14/86
11.5.2.b	270.16	7/14/86
Appendix I	260.11	3/16/86
Appendix VIII	Appendix VIII of Part 261	8/6/86
Appendix IX	Appendix to Part 262	10/1/86

In addition to changes made in order to conform with the EPA Cluster 3 revisions, the Department has made one other significant change to its regulations, as outlined below. Erroneous section numberings and minor typographical errors in the current regulations were also corrected.

The Department is proposing revisions to the hazardous waste descriptions in Section 3.4.2 of the regulations (Hazardous Wastes from Nonspecific Sources). The descriptions for EPA Hazardous Waste Numbers F001 through F005 would be expanded to cover spent solvents from nonspecific sources.

By adoption of the Hazardous and Solid Waste Act Amendments of 1984 (HSWA), the EPA redefined one particular category of wastes -- spent solvents from non-specific sources. These are the wastes numbered F001 through F005. As stated in the Federal Register: "This closes a major loophole in RCRA which, up until now, allowed wastes from certain blends of these solvents to go unregulated." This area of RCRA is perhaps one of the most poorly worded and most commonly abused. At a practical level, the pre-HSWA wording allowed waste from a 50/50 blend of solvents to go unregulated. It is obvious that a blend of 50% Methylene Chloride and 50% Trichloroethylene is no less toxic and carcinogenic than a solvent containing only one of these chemicals. Additionally, chemical reactions which occur consequent to the use of the chlorinated solvents will often result in an analysis which indicates a mixture of closely-related compounds as opposed to one distinct compound.