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LOUISIANA HAZARDOUS WASTE REGULATIONS

**STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY
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INTRODUCTION

- 1.1 Authority -- Rules and regulations for a hazardous waste management system are hereby established by the Department of Natural Resources as mandated by Act 449 of the 1979 Legislature as amended, which is the State's response to P.L. 94-580, the Resource Conservation and Recovery Act of 1976 (RCRA).
- 1.2 Purpose -- These rules and regulations serve a fourfold purpose:
- a) First, to protect the health and well-being of the people of the State of Louisiana and to prevent damage to property or to the environment by the improper management of hazardous waste;
 - b) Second, to provide incentives for the maximum recovery and reuse of substances in hazardous waste streams that are possible through the use of the most advanced technology;
 - c) Third, to carefully consider the impact of the program on the economic vitality of the State and to achieve a proper balance that protects the health of the citizens and the environment of the State while meeting the needs of industry; and
 - d) Fourth, to establish minimum State standards that define the acceptable management of hazardous waste.
- 1.3 Program scope -- These rules and regulations apply to owners and operators of all facilities that generate, transport, treat, store, or dispose of hazardous waste, except as specifically provided otherwise herein. Definitions appropriate to these rules and regulations appear in Chapter 2.
- a) Notification of hazardous waste activity -- Within ninety days after the promulgation of these regulations anyone subject to these regulations who has not previously notified the Department on The Notification of Hazardous Waste Activity Form - HW-1, or whose notification on Form HW-1 is not correct, must notify the Department using Form HW-1. Within ninety days after changes in waste characteristics or changes in these regulations that result in changes in the notification, interim status facilities must revise their notification form by resubmitting a corrected copy of Form HW-1.

All notifications must contain an EPA Identification number. EPA identification numbers are available from EPA in accordance with the EPA notification procedures.

b) Classification of hazardous wastes -- Hazardous wastes are classified into two categories:

- 1) Category I wastes are those known chemicals and process streams whose hazardous nature has been prescribed by prior determination and which are presented in Chapter 24.
- 2) Category II wastes are those wastes possessing any of the characteristics of the hazard classes listed in Chapter 24. Hazard classes of concern for these wastes are ignitability, corrosivity, reactivity and toxicity.

c) Control of wastes -- Wastes generated, transported, treated, stored, and/or disposed of in Louisiana are controlled by the State of Louisiana according to the appropriate statutes of the State of Louisiana as follows, and provided that nothing contained herein shall limit the authority granted to the Department of Natural Resources (hereinafter referred to as the Department) under Title 30 of the Louisiana revised statutes or to its successor (scheduled to be the Department of Environmental Quality after February 1, 1984.)

- 1) The Department's Hazardous Waste Program is responsible for the following, subject to these rules and regulations and to Title 30 of the Louisiana Revised Statutes:

Surface installations and areas associated with the disposal of wastes in injection wells, excluding the injection well proper.

All wastes listed as hazardous in Chapter 24 or having the hazardous characteristics identified in Chapter 24, which are generated, treated, stored, and/or disposed of in Louisiana.

- 2) The Solid Waste Management Division is responsible for nonhazardous solid wastes treated, stored, and/or disposed of in public and private solid waste facilities.
- 3) The Department of Natural Resources, Office of Conservation, which is under the authority of the Commissioner, is subject to rules and regulations promulgated by the Office of Conservation. Their responsibilities include:

Salt water injection wells including related surface installations, mud pits, and other areas associated with the exploration and production of oil and gas; and

Injection wells, less related surface installations and areas, for industrial on-site or commercial disposal of hazardous wastes, until the effective date of Act 97 of 1983 (scheduled to be February 1, 1984), after which time they shall be regulated by the Department of Environmental Quality, Hazardous Waste Division in accordance with the provisions of Title 30 of the Louisiana Revised Statutes.

- 4) The Nuclear Energy Division is responsible for radioactive materials.
 - 5) The Louisiana Department of Public Safety (LDPS) is responsible for transportation of wastes.
 - 6) The Department of Agriculture is responsible for waste pesticides, including pesticide containers at point of mixing, loading, application, equipment cleansing, or base of operation.
- d) Exemptions, Exceptions and/or Modifications to otherwise applicable provisions of these regulations
- ✓ 1) Persons who generate small quantities on an infrequent basis which pose minimum threat to human health or to the environment may be exempt from these regulations. The Administrative Authority reserves the right to make individual determinations under this section. In no case shall any such exemption be granted if the quantitative limits for consideration of exemption exceed those stated in Chapter 21.
 - ✓ 2) A generator who temporarily stores hazardous wastes in an environmentally safe container or tank [see §7.5e)] on-site for ninety days or less is exempt from the permitting regulations except for the requirements of Chapter 7. Generators must record the date that storage began by proper marking of the container or by other methods acceptable to the Administrative Authority. Such temporary storage shall be in an environmentally sound manner in compliance with the technical requirements of §§9.3, 9.5a), 9.7 through 9.9, 9.13, and as applicable with §§11.2b) through 11.2d), 11.2f), 11.2g), 11.3 through 11.5, §§12.2 through 12.5b), and 12.6 through 12.8.
 - ✓ 3) The owner or operator of a facility permitted, licensed, or registered to manage municipal or industrial solid waste, if the only hazardous waste the facility treats, stores, or disposes of is exempted from regulation by the Louisiana Hazardous Waste Regulations (LHWR).
 - ✓ 4) The owner or operator of a facility which treats or stores hazardous waste which is being beneficially used or reused, or legitimately recycled or reclaimed as defined in Chapter 22 of the LHWR is only required to comply with Chapter 22.
 - ✓ 5) A farmer disposing of waste pesticides from his own use which are hazardous wastes is not required to comply with the standards in this Chapter or other standards in the LHWR for those wastes, provided he triple rinses each emptied pesticide container in accordance with §24.1c)3) and disposes of the pesticide residues on his own farm in a manner consistent with the disposal instructions on the pesticide label.
 - ✓ 6) The owner or operator of a totally enclosed treatment facility as defined by Chapter 2 is exempt from these regulations.

- ✓ 7) The owner or operator of an elementary neutralization unit as defined by Chapter 2 is exempt from these regulations.
- ✓ 8) Persons who respond immediately to contain or treat a spill of hazardous waste or material, which when spilled becomes a hazardous waste, are exempt from these regulations. The exception to such activities is the appropriate requirements of §§9.6 and 9.7. This paragraph only applies to activities taken in immediate response to a spill. After the immediate response activities are completed, the applicable sections of these regulations apply fully to the management and disposal of any spill residue or debris which is a hazardous waste.
- ✓ 9) The addition of absorbent material to waste in a container (defined in Chapter 2) or the addition of waste to absorbent material in a container are exempt from these regulations, provided that these actions occur at the time waste is first placed in the container and are in compliance with §§9.9b), 11.2b), and 12.3.
- ✓ 10) Household waste, including household waste that has been collected, transported, stored, treated, disposed of, recovered (e.g., refuse-derived fuel) or reused is exempt from these regulations.
- ✓ 11) Solid wastes generated by growing and harvesting agricultural crops and raising animals, including animal manures which are returned to the soils as fertilizers, are exempt from these regulations.
- ✓ 12) Mining overburden returned to the mine site is exempt from these regulations.
- ✓ 13) 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 are exempt from these regulations.
- ✓ 14) Drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas, or geothermal energy are exempt from the regulations.
- ✓ 15) Wastes which fail the test for the characteristic of EP toxicity because chromium is present or are listed in Chapter 24, Category I, due to the presence of chromium, and which do not fail the test for the characteristic of EP toxicity for any other constituent, and which do not fail the test for any other characteristic, are exempt from these regulations if it is shown by waste generators that:

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

The waste is generated from an industrial process which uses exclusively (or nearly exclusively) trivalent chromium and the process does not generate hexavalent chromium; and

The waste is typically and frequently managed in non-oxidizing environments.

- ✓ 16) The following specific wastes which meet the standard in §1.3d)15) (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 exempt from these regulations:

Chrome (blue) trimmings and shavings, buffing dust, sewer screenings, and wastewater treatment generated by the leather tanning and finishing industry including hair pulp/chrome tan/retan/wet finish, hair save/chrome tan/retan/wet finish, retain/wet finish, no beamhouse, through-the-blue, and shearling;

Wastewater treatment sludges generated by the leather tanning and finishing industry including hair pulp/chrome tan/retan/wet finish, hair save/chrome tan/retan/wet finish, and through-the-blue;

Waste scrap leather from the leather tanning industry, the shoe manufacturing industry, and other leather product manufacturing industries; and

Wastewater treatment sludges from the production of TiO pigment using chromium-bearing ores by the chloride process.

- ✓ 17) Solid waste from the extraction, beneficiation and processing of ores and minerals including coal, phosphate rock, bauxite, and overburden from the mining of uranium ore is exempt from the regulation.

- ✓ 18) Cement kiln dust waste is exempt from these regulations.

- ✓ 19) Discarded wood or wood products which fail the test for the characteristic of EP toxicity and which are not a hazardous waste for any other reason, if the waste is generated by persons who utilize the treated wood and wood products for these materials' intended end use, are exempt from these regulations.

- ✓ 20) All 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 exempt from these regulations, 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 days after the unit ceases to be operated for manufacturing, or for storage or transportation of product or raw materials.

- ✓ 21) Samples of solid waste waste, soil, or air, which are collected for the sole purpose of testing to determine characteristics or composition are exempt from these regulations, when:

The sample complies with §1.3d)22) and is being transported to a laboratory for the purpose of testing;

The sample is being transported back to the sample collector after testing;

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

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

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).

- ✓ 22) In order to qualify for the exemption in §1.3d)21), a sample collector shipping samples to a laboratory and a laboratory returning samples to a sample collector must:

Comply with LDPS, U.S. Postal Service (USPS), or any other applicable shipping requirements; or

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

Assure that the following information accompanies the sample:

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

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

The quantity of the sample;

The date of shipment; and

A description of the sample;

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

✓ 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 §1.3d)21).

- ✓ 23) Spent pickle liquor which is used in wastewater treatment at a facility holding an NPDES permit, or which is being accumulated, stored, or physically, chemically, or biologically treated before such reuse is exempt from these regulations.

- ✓ 24) Effluent discharges from a properly permitted NPDES train are exempt from these regulations provided previously separated hazardous wastes

are not intentionally added to the train and the facility meets the requirements of the NPDES permit.

- ✓ 25) Wastewaters covered under the mixture rule in §24.3.
 - ✓ 26) The requirements of this Chapter apply to a person disposing of hazardous waste by means of ocean disposal subject to a permit issued under the Marine Protection, Research, and Sanctuaries Act only to the extent that they are included in a hazardous waste permit granted to such a person. These regulations do apply to the treatment or storage of hazardous waste before it is loaded onto an ocean vessel for incineration or disposal at sea.
 - ✓ 27) The requirements of this Chapter apply to the owner or operator of a POTW (Public Owned Treatment Works) which treats, stores, or disposes of hazardous waste only to the extent that they are included in a hazardous waste permit by rule granted to such a person under §3.3c)2).
- e) Judicial review -- Any person has the right to file a lawsuit to reverse any act or failure to act by the Administrative Authority pursuant to these regulations or the Act in accordance with the provisions of the Administrative Procedures Act (R.S. 49:951 et seq.) or any other applicable provision of law.
 - f) Relationship to interim status standards -- A facility owner or operator who has fully complied with the requirements for interim status must comply with these regulations until final administrative disposition of his permit application is made. After the effective date of these regulations, the treatment, storage, or disposal of hazardous waste is prohibited except in accordance with a permit (standard or interim). The Administrative Authority may provide for the continued operation of an existing facility which meets the requirements of these regulations and certain conditions until final administrative disposition of the owner's or operator's permit application is made.
 - g) Imminent hazard action -- Notwithstanding any other provisions of these regulations, enforcement actions may be brought pursuant to the Act.
 - h) General procedures to petition the Administrative Authority
 - 1) Any person may petition the Administrative Authority to modify or revoke any provision in the Louisiana Hazardous Waste Regulations (LHWR). This subpart sets forth general requirements which apply to all such petitions. §1.3i) sets forth additional requirements for petitions for equivalent testing or analytical methods.
 - 2) Each petition must be submitted to the Administrative Authority by certified mail and must include:

The petitioner's name and address;

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

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

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

- 3) The Administrative Authority will make a tentative decision to grant or deny a petition and will publish notice of such petition decision, either in the form of an advanced notice of proposed rulemaking, a proposed rule, or a tentative determination to deny the petition, in the Louisiana Register for written public comment.
- 4) Upon the written request of any interested person, the Administrative Authority may, at its discretion, hold an informal public hearing to consider oral comments on the tentative decision. A person requesting a hearing must state the issues to be raised and explain why written comments would not suffice to communicate the person's views. The Administrative Authority may in any case decide on its own motion to hold an informal public hearing.
- 5) After evaluating all public comments, the Administrative Authority will make a final decision by publishing in the Louisiana Register a regulatory amendment or a denial of the petition.

i) Petitions for equivalent testing or analytical methods

- 1) Any person seeking approval of an equivalent testing or analytical method may petition for a regulatory amendment under §§1.3h) and 1.3i). To be successful, the person must demonstrate to the satisfaction of the Administrative Authority that the proposed method is equal to or superior to the corresponding method prescribed in "Test Methods for Evaluating Solid Waste Physical/Chemical Methods" (SW846) or the Guidance Manual for the Louisiana Hazardous Waste Regulations (GMLHWR), in terms of its sensitivity, accuracy, and precision (i.e., reproducibility).

- 2) In addition to the information required by §1.3h)2) each petition must include,

A full description of the proposed method, including all procedural steps and equipment used in the method;

A description of the types of wastes or waste matrices for which the proposed method may be used;

Comparative results obtained from using the proposed method with those obtained from using the relevant or corresponding methods prescribed in SW846 or the GMLHWR;

An assessment of any factors which may interfere with or limit the use of the proposed method; and

A description of the quality control procedures necessary to ensure the sensitivity, accuracy, and precision of the proposed method.

- 3) After receiving a petition for an equivalent method, the Administrative Authority may request any additional information on the proposed method which it may reasonably require to evaluate the method.
- 4) If the Administrative Authority amends the regulations to permit use of a new testing method, the method will be incorporated in the GMLHWR.
- j) Emergency Notification of the Louisiana Hazardous Waste Division -- Any ~~person who~~ discharges, emits, or disposes of any hazardous waste into the water, air, or land within the State, or has information that such an incident is likely to or did occur, in contravention of the Louisiana Hazardous Waste Control Law (L.R.S. 30:1131-1149) or of the regulations, or of the terms and conditions of a permit or license issued thereunder, shall immediately upon learning of the discharge, emission, or disposal notify the Hazardous Waste Division, Office of Environmental Affairs, as to the nature and amount of the discharge and the circumstances surrounding the discharge.

1.4 Enforcement

- a) Failure to comply with any of the provisions of these regulations or of the terms and conditions of any permit granted or order issued hereunder constitutes a violation of the Act.
- b) Investigations into reports of violations.
 - 1) Upon the receipt of any information concerning a violation of the requirements of the Act or these regulations, the Administrative Authority shall cause an investigation to be conducted into the alleged violation within seven days.
 - 2) All facts concerning any violation developed in such an investigation shall be fully documented in a report of investigation and presented to the Administrative Authority within seven days of completion of the investigation. A copy of this report shall be furnished to the Louisiana Department of Justice for use in any civil or criminal proceedings under the Act.
- c) Upon receipt of any report of investigation which substantiates a violation of the requirements of the Act or these regulations, the Administrative Authority shall commence enforcement proceedings under the Act.

CHAPTER 2

DEFINITIONS

- 2.1 For all purposes of these rules and regulations, the terms defined in this Chapter shall have the following meanings, unless the context of use clearly indicates otherwise:

Act -- Act 449 of the 1979 Louisiana Legislature which established Sections 1051 et seq, Title 30 of the Louisiana Revised Statutes of 1950 and any subsequent amendments to these sections.

Active portion -- that portion of a facility where treatment, storage, or disposal operations are being or have been conducted after August 1, 1979, and which is not a closed portion. (See also "closed portion" and "inactive portion.")

Administrative Authority -- the Environmental Control Commission, Assistant Secretary, or any person designated to act for them. After the effective date of Act 97 of 1983 (Scheduled to be February 1, 1984), the Administrative Authority shall be the Secretary of the Department of Environmental Quality, or the Environmental Control Commission when the authority is delegated to the commission by the Secretary of the Department.

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

Assets -- all existing and all probable future economic benefits obtained or controlled by a particular entity.

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

Barrier -- a physical separation by natural or constructed means which prevents or restricts the penetration to adjacent areas of the harmful effects of hazardous wastes.

Basin -- any uncovered area constructed to retain hazardous wastes.

Category I wastes -- chemicals and process streams whose hazardous nature has been prescribed by prior determination and which are presented in Chapter 24, i.e., from non-specific sources, specific sources, acute hazardous wastes, and toxic wastes.

Category II wastes -- wastes possessing any of the characteristics of the hazard classes listed in Chapter 24. Hazard classes of concern for these wastes are ignitability, corrosivity, reactivity, and toxicity. Analytical protocols are detailed in Chapter 24.

Caretaker management -- management by the Administrative Authority, through an appointed manager to operate a hazardous waste facility during the time the permit of the facility is revoked.

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

Closure -- the act of securing and rendering harmless a site which has been used to treat, store, or dispose of a hazardous waste so that it will pose no significant threat to human health or the environment.

Closure plan -- the plan for closure prepared in accordance with the requirements of Chapter 19.

Current closure cost estimate -- the most recent of the estimates prepared in accordance with §20.3.

Current post-closure cost estimate -- the most recent of the estimates prepared in accordance with §20.5.

Commercial facility -- a hazardous waste treatment, storage, or disposal facility which receives, treats, stores, or disposes of waste for a fee or other consideration.

Compliance schedule -- remedial measures including an enforceable sequence of events, operations, or milestone actions leading to compliance with these rules and regulations and the Act.

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

Constituent or hazardous waste constituent -- any substance specified as a hazardous waste in any list in these rules and regulations.

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

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

Corrosive waste -- a waste subject to these regulations pursuant to provisions of §24.2b) which, because of such properties as acidity or alkalinity, would tend to weaken or erode a common construction material.

Current assets -- cash, other assets, or resources commonly identified as those which are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of the business.

Current liabilities -- obligations whose liquidation is reasonably expected to require the use of existing resources properly classifiable as current assets or the creation of other current liabilities.

Date of Issuance of the hazardous waste permit -- The date shown on the hazardous waste permit as the date of issue.

Department -- Department of Natural Resources, or after February 1, 1984, Department of Environmental Quality, pursuant to Act 97 of 1983.

Designated facility -- a hazardous waste treatment, storage, or disposal facility which has received a permit (or a facility with interim status) in accordance with the requirements of Chapters 3 and 4.

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

Discarded -- a material is "discarded" if it is abandoned (and not used, re-used, reclaimed, or recycled) by being disposed of; or burned or incinerated, except where the material is being burned as a fuel for the purpose of recovering usable energy; or physically, chemically, or biologically treated (other than burned or incinerated) in lieu of or prior to being disposed of.

Discharge or hazardous waste discharge -- the placing, spilling, releasing, percolating, draining, seeping, disposing, bypassing, or other escaping of pollutants into the air, waters, subsurface water, or the ground as the result of a prior act or omission; or the placing of pollutants into natural or man-made pits or drums, barrels or similar containers under conditions and circumstances that leaking, seeping, draining, or escaping of the pollutants can be reasonably anticipated.

Displacement -- The relative movement of any two sides of a fault measured in any direction.

Disposal -- 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 waters, including ground waters of the State.

Disposal facility -- 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.

Disposer -- any person or agency who operates a treatment, storage and/or disposal facility.

Domestic sewage -- untreated sanitary wastes that pass through a sewer system.

Elementary neutralization unit -- a device that meets the definition of tank, container, transport vehicle, or vessel used for neutralizing hazardous wastes that exhibit the corrosivity characteristic defined in the LHW, §24.2b).

Emergency action -- a situation in which there is no feasible alternative, other than the extraordinary actions authorized, to avoid loss of life, serious injury to human health or the environment, or severe damage to property.

Empty container --

- (a) 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 §24.1c)5) of the LHW, is empty if:
 - (1) All wastes have been removed that can be, using the practices commonly employed to remove materials from that type of containers, e.g., pouring, pumping, and aspirating, and
 - (2) No more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner.
 - (3) No more than 3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 100 gallons in size, or
 - (4) No more than 0.3 percent by weight of the total capacity of the container or inner liner if the container is greater than 110 gallons in size.
- (b) A container that has held a hazardous waste that is a compressed gas is empty when the pressure in the container approaches atmospheric.
- (c) A container or an inner liner removed from a container that has held a hazardous waste identified in §24.1c)5).
 - (1) The container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate;
 - (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) 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.

EPA hazardous waste number -- the number assigned by EPA to each hazardous waste (see Chapter 24).

EPA identification number -- the number assigned by EPA to each generator, transporter, and treatment, storage, or disposal facility.

Equivalent method -- any testing or analytical method approved by the Administrative Authority.

Existing facilities -- hazardous waste facilities in operation or under construction on or before August 1, 1979.

Facilities -- a group of units (each an individual facility) on a site operated to treat, store, and/or dispose of hazardous waste.

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

Fault -- a fracture along which rocks or soils on one side have been displaced with respect to those on the other side.

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

Federal, State, and local approvals or permits necessary to begin physical construction -- permits and approvals required under Federal, State, or local statutes, regulations, or ordinances.

Final permit -- same as Permit.

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

Foreign Source -- any hazardous waste originating from other than the fifty states, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands, or any other territory or protectorate.

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

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

Fresh-water aquifer -- water-bearing formations capable of yielding usable quantities of groundwater with dissolved minerals less than 10,000 mg/l to drinking water wells, pumps, springs, or streams.

Generator -- any person, by site, whose act or process produces hazardous waste identified or listed, or whose act first causes a hazardous waste to become subject to regulation.

Groundwater -- water in the saturated zone beneath the land surface.

Hazardous material -- a material designated under Louisiana Department of Public Safety Regulations to be capable of posing an unreasonable risk to health, safety, or property when transported.

Hazardous waste (Note: Also see definition of "waste.") --

A hazardous waste is any material that is included as a hazardous waste in Chapter 24 or a solid waste or combination of solid wastes which, because of quantity, concentration, or physical, chemical, or infectious characteristics, may:

Cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or

Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

A solid waste becomes a hazardous waste when;

The solid waste is mixed with a hazardous waste that is listed in Chapter 24, Category I, solely because it exhibits one or more of the characteristics of hazardous waste identified in Chapter 24, Category II; or

The solid waste is mixed with one or more hazardous wastes listed in Chapter 24, Category I, and has not been excluded pursuant to §§1.3d) or 1.3h).

A solid waste becomes a hazardous waste when a hazardous waste listed in Chapter 24, Category I, is first added to it or when the waste first exhibits any of the characteristics identified in Chapter 24, Category II.

A hazardous waste is the solid waste generated from treatment, storage, or disposal of a hazardous waste including sludges, spill residues, ash, emission control dust, or leachate.

Hazardous waste management -- the systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery, and disposal of hazardous wastes.

Hazardous waste permit -- same as Permit.

Health care waste -- infectious or other hazardous waste resulting from operations of a health care facility.

Holocene -- the most recent epoch of the quaternary period extending from the end of the Pleistocene to the present.

Household waste -- any waste material (including garbage, trash, and sanitary wastes in septic tanks) derived from households (including single and multiple residences, hotels, and motels).

Ignitable waste -- a waste subject to these regulations pursuant to provisions of §24.2a), of such properties as to constitute a potential fire hazard during its management.

Inactive portion -- that portion of a facility which is not operated after August 1, 1979. (See also "active portion" and "closed portion.")

Incinerator -- an enclosed device using controlled flame combustion, the primary purpose of which is to thermally break down hazardous waste. Examples of incinerators are rotary kiln, fluidized bed, and liquid injection incinerators.

Incompatible waste -- a waste unsuitable for commingling with another waste or material if the commingling might result in the generation of: extreme heat or pressure; fire; explosion or violent reaction; substances which are shock-sensitive, friction-sensitive, or which otherwise have the potential of reacting violently; toxic dusts, mists, fumes, gases, or other chemicals; volatilized ignitable or toxic chemicals due to heat generation in such a manner that the likelihood of contamination of ground water, or escape of the substances into the environment, is increased; or any other similar reactions.

Individual generation site -- 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 property is contiguous.

Infectious waste -- a waste which has the potential to endanger humans or other living organisms by the communication of diseases caused by micro-organisms and/or viruses.

Injection well -- those wells, intended or used for disposal of hazardous waste, drilled to a strata below any fresh-water aquifer and permitted, or required to be permitted, by the Office of Conservation or after February 1, 1984, by the Department of Environmental Quality.

In operation -- a facility which is treating, storing, or disposing of hazardous waste.

Interim status -- All facilities that have met the requirements established by §3005e of the Resource Conservation and Recovery Act et seq. and as such has been recognized by the U.S. Environmental Protection Agency (EPA) and approved by the Administrative Authority in accordance with the Louisiana Environmental Affairs Act.

Interim permit -- the hazardous waste permit issued by Louisiana to facilities with interim status.

Inner liner -- 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.

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

Lab pack -- An overpacked container (such as a drum) containing small, tightly-sealed containers of hazardous waste with an absorbent material filling the voids in the outer container (drum).

Lagoon -- a shallow sound, channel, or pond near, or communicating with, a larger body of water, either natural or man-made.

Landfarm -- a facility for the application of waste onto land and/or incorporation into the surface soil for the purpose of biological reduction and soil attenuation, including the use of such waste as a fertilizer or soil conditioner.

Landfill -- a secured area in which hazardous waste is deposited for ultimate disposal and covered with soil.

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

Land treatment facility -- 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.

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

Liner -- a continuous layer of material, beneath and on the sides of a surface impoundment, landfill, or landfill cell, which restricts the downward or lateral escape of hazardous waste, hazardous waste constituents, or leachate.

Management or hazardous waste management -- the systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery, and disposal of hazardous waste.

Manifest -- the form used for identifying the quantity, composition, and the origin, routing, and destination of hazardous waste during its transportation from the point of generation to the point of off-site disposal, treatment, or storage.

Manifest document number -- the serially increasing number assigned to the manifest by the generator for recording and reporting purposes.

Mining overburden returned to the mine site -- 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.

Monitoring -- inspection and collection of data following a predesigned ~~schedule and system on operational parameters of the facility~~ or on the quality of the environment including the air, ground water, surface water, or soils.

New hazardous waste management facility or new facility -- a facility which began operation, or for which construction commenced after August 1, 1979.

One hundred year floodplain -- the lowland and relatively flat areas adjoining inland and coastal areas of the mainland and off-shore islands, including, at a minimum, areas subject to a one percent or greater chance of flooding in any given year.

One hundred year flood -- a flood that has a one percent chance of being equalled or exceeded in any given year.

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

Open burning -- the combustion of any material without the following characteristics: control of combustion air to maintain adequate temperature for efficient combustion; containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion; and control of emission of the gaseous combustion products.

Operator, owner, licensee, manager, etc. -- whoever has legal authority and responsibility for a facility that generates, transports, treats, stores, or disposes of any hazardous waste.

Owner -- the person who owns a facility or part of a facility.

Parent corporation -- a corporation which directly owns at least fifty percent of the voting stock of the corporation which is the facility owner or operator; the latter corporation is deemed a "subsidiary" of the parent corporation.

Partial closure -- the closure of a discrete part of a facility in accordance with the applicable closure requirements. For example, partial closure may include the closure of a trench, a unit operation, a landfill cell, or a pit, while other parts of the same facility continue in operation or will be placed in operation in the future.

Permit -- The permit issued by the State of Louisiana to a facility to treat, store, and/or dispose of hazardous waste under the conditions specified in the permit and the conditions required by the Act and these regulations.

Person -- an individual, trust, firm, joint stock company, corporation (including a government corporation), partnership, association, state, municipality, commission, political subdivision of a State, an interstate body, or the Federal government or any agency of the Federal government.

Personnel or facility personnel -- all persons who work at or oversee the operations of a hazardous waste facility, and whose actions or failure to act may result in noncompliance with the requirements of the LHWR.

Petition -- a written request made to the Administrative Authority.

Pile -- any non-containerized accumulation of solid, nonflowing hazardous waste that is used for treatment or storage.

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

Pond -- a confined body of standing water usually smaller than a lake, either natural or man-made.

Post-closure plan -- the plan for the post-closure care prepared in accordance with the requirements of Chapter 19.

Potable-water aquifer -- water-bearing formations capable of yielding usable quantities of groundwater with dissolved minerals less than 10,000 mg/l to drinking water wells, pumps, springs, or streams.

Proper -- a qualifying adjective requiring consistency with any operating procedures published by the Department.

Public water supply well -- a well of piped water for consumption by the public if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least sixty days out of the year.

Publicly-owned treatment works or POTW -- any device or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by the State, parish, municipality, or other governmental subdivision. This definition includes sewers, pipes, or other conveyances only if they convey wastewater to POTW providing treatment.

Reactive waste -- a waste subject to these regulations pursuant to provisions of §24.2c) which is normally unstable or which may endanger life or property in the presence of other substances likely to be encountered in the management of waste.

Reclaimer -- one who reclaims barrels or other containers for reuse by removing all hazardous residue of prior contents.

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

Resource recovery -- recovery of useful material or energy from hazardous waste.

Reusable material -- any material defined in Chapter 24 which would be classified as a hazardous waste except that it will be beneficially used, reused, or legitimately recycled, or reclaimed, unless exempted in Chapter 22.

Run-off -- any rainwater, leachate, or other liquid that drains overland from any part of a facility.

Run-on -- any rainwater, leachate, or other liquid that drains overland onto any part of a facility.

Rural -- all areas zoned rural or not zoned at all by a municipality or parish.

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

SIC -- Standard Industrial Classification Code.

Site -- land area and appurtenances, thereon and thereto, used for the treatment, storage, and/or disposal of hazardous waste.

Sludge -- any solid, semisolid, 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.

Solid waste -- any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility, and other waste materials including solid, liquid, semisolid, or contained gaseous materials resulting from industrial, commercial, mining, and agricultural operations, and from community activities, which: are discarded or accumulated; are stored; are physically, chemically, or biologically treated prior to being discarded; have served their original intended use and are sometimes discarded. The following are not considered solid wastes: domestic sewage, and solid and dissolved materials in domestic sewage that pass through a sewer system to a publicly-owned treatment work (POTW) for treatment; irrigation return flows; industrial wastewater discharges that are point sources subject to permit under Section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880); source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923); and materials subjected to in-situ mining techniques which are not removed from the ground as part of the extraction process.

Spill -- the accidental or intentional spilling, leaking, pumping, pouring, emitting, or dumping of hazardous wastes or materials which, when spilled, become hazardous wastes into or on any land, air, or water.

Standards -- performance criteria established by Department to govern the hazardous waste program.

Storage -- the containment of hazardous waste for such time as may be permitted by regulations in such a manner as not to constitute disposal of hazardous waste.

Storage facility -- any environmentally sound facility used to store hazardous waste.

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

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

Temporary storage -- storage of a generator's waste onsite for less than 90 days.

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

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

Toxic waste -- a waste subject to these regulations pursuant to provisions of §24.2d) which, by its chemical properties, has the potential to endanger human health or other living organisms by means of acute or chronic adverse effects, including poisoning, mutagenic, teratogenic, or carcinogenic effects.

Transfer facility -- 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.

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

Transports or transportation -- the movement of hazardous waste from the point of generation or storage to the point of treatment, storage, or disposal by any means of commercial or private transport. The term does not apply to the movement of hazardous wastes on the premises of a hazardous waste generator or on the premises of a permitted hazardous waste treatment, storage, or disposal facility.

Transport vehicle -- a motor vehicle, aircraft, rail freight car, freight container, cargo tank, portable tank, or vessel used for the transportation of hazardous waste. Each cargo-carrying body (trailer, railroad freight car, etc.) is a separate transport vehicle.

Treatment (when used in connection with hazardous waste) -- any method, technique, or process, including neutralization, designed to change the physical or chemical character or composition of any hazardous waste so as to neutralize such waste or so as to render such waste nonhazardous, safer for transport, amenable for 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 so as to render it nonhazardous.

Type of waste -- waste description by category as classified in Chapter 24 to these rules and regulations.

Underground injection -- the subsurface emplacement of fluids through a drilled well below the potable water aquifers. (See also "injection well.")

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

Uppermost aquifer -- the geological formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer.

Vessel -- any type of watercraft used, or capable of being used, as a means of transportation on the water.

Volatile waste -- hydrocarbon or other waste with a vapor pressure greater than or equal to 1.5 psia.

Washout -- The movement of hazardous waste from the active portion of the facility as a result of flooding.

Waste -- any material for which no use or reuse is intended and which is to be discarded. [Note: Feed streams to processes from which usable substances (products) are extracted, including use of waste as fuel producing energy, are not considered waste. Only the discarded substances are considered "waste."]

Wastewater treatment unit -- a device that is part of a wastewater treatment facility subject to regulations of the Water Quality Division; that receives and treats or stores an influent wastewater which is a hazardous waste, or generates and accumulates a wastewater treatment sludge which is a hazardous waste, or treats or stores a wastewater treatment sludge which is a hazardous waste; and meets the definition of a tank as specified above.

CHAPTER 3

GENERAL CONDITIONS FOR TREATMENT, STORAGE, AND DISPOSAL FACILITY PERMITS

- 3.1 Authority -- The Louisiana Environmental Affairs Act (Acts 1979, 449) authorizes the Department to administer this permit program.
 - a) This Chapter establishes general conditions for permit standards applicable to treatment, storage, and disposal (TSD) facilities. Chapter 4 establishes the contents of the permit application and Chapter 5 establishes the Administrative procedures for receipt, evaluation, and issuance of TSD permits. Chapter 7 establishes standards applicable to generators of hazardous waste. Chapter 8 establishes standards applicable to transporters of hazardous waste. Chapter 9 establishes general standards for TSD facilities. Chapters 11 through 17 establish specific technical requirements for various disposal facility components.
- 3.2 Overview of the permit program
 - a) No later than ninety days after the promulgation or revision of these regulations, all generators and transporters of hazardous waste, and all owners or operators of hazardous waste treatment, storage, or disposal facilities must file or have on file a notification of that activity using Notification Form HW-1, available from the Administrative Authority.
 - b) Treatment, storage, or disposal of hazardous waste is prohibited by any person who has not received an interim status or a standard permit.
 - c) A hazardous waste permit application consists of two parts:
 - 1) Part I requirements are listed in §4.8.
 - 2) Part II requirements are listed in §4.9.
 - d) No facility may be used to treat, store, and/or dispose of hazardous waste without a permit for the specific activities, procedures, and classification of waste handled as outlined in their permit, or in emergency situations under the direction of the Administrative Authority as provided in §§5.1 or 5.2.
 - e) Requirements for existing TSD facilities -- Owners and operators of existing TSD facilities must submit Part I of their permit application to the Administrative Authority in compliance with the standards set forth in LHWR, or thirty days after the date they first become subject to the standards set forth in LHWR, whichever occurs first.

- 1) The owner or operator of an existing TSD facility may be required to submit a permit application at any time. Any owner or operator shall be allowed at least six months from the date of request to submit the application. Any owner or operator of an existing TSD facility may voluntarily submit the application at any time.
 - 2) The Administrative Authority may by compliance order extend the date by which the owner or operator of an existing TSD facility must submit a permit application. In no instance will the Administrative Authority grant an extension of permit submission for more than 180 days.
 - 3) Failure to furnish a requested Part II application on time, or to furnish in full the information required by the Part II application, is grounds for termination of interim status under Chapter 23.
- f) Part II formal permit application -- The formal permit application must follow all outline, numbering system, and other format requirements established by the Administrative Authority.
- g) Requirements for interim status facilities -- Facility owners and operators with interim status must comply with interim status standards set forth in Chapter 23.
- h) Requirements for new TSD facilities -- Owners or operators of new TSD facilities must submit Part I and Part II of the permit application at least 180 days before physical construction is expected to commence except as provided in §3.1h)3).
- 1) No person shall begin physical construction of a new TSD facility or begin major modifications to an existing facility without having submitted Parts I and II of the permit application and received a final effective TSD permit.
 - 2) An application for a permit for a new TSD facility (including both Parts I and II) may be filed any time after promulgation of these standards, applicable to such facility. The application shall be filed with the Administrative Authority.
 - 3) After August 1, 1979, but prior to the effective date of those standards in Chapters 10 through 17 which are applicable to his facility, a person may begin physical construction of a new TSD facility except for landfills, injection wells, land treatment facilities, or surface impoundments (as defined in Chapter 2), without having received a final effective permit. If prior to beginning physical construction such person has:

Obtained the Federal, State, and local approvals or permits necessary to begin physical construction;

Submitted Part I of the permit application; and

Made a commitment to complete physical construction of the facility within a reasonable time. Such persons may continue physical construction of the TSD facility after the effective date of the permitting standards in Chapters 10 through 17 applicable to his facility if he submits Part II of the permit application on or before the effective date of such standards (or on some later date specified by the Administrative Authority). Such person must not operate the TSD facility without having received a final effective permit.

- 4) A new facility must obtain an EPA Identification Number. EPA Identification Numbers will be issued only by the EPA. However, application for an EPA Identification Number shall be made by completing the Hazardous Waste Notification form provided by the Department.
- i) No new facility or major modification of an existing facility may commence treatment, storage, or disposal of hazardous waste until the facility is complete and:
 - 1) The permittee has submitted to the Administrative Authority by certified mail or hand delivery a letter signed by the permittee and an engineer ~~licensed in Louisiana~~ stating that the facility is complete and built in accordance with terms of the permit; and
 - 2) The facility has been inspected by the Department following a "request to make final inspection" by the operator, and an Order to Proceed is issued.
- j) Timely permit submission -- Failure to furnish a requested application on time or failure to furnish in full the information required by the application is grounds for termination of interim status.
- k) Updating permit applications
 - 1) If any owner or operator of a TSD facility has filed Notification Form HW-1 and has not yet filed a permit application, the owner or operator shall file an amended Notification:

Whenever the facility determines that it treats, stores, or disposes of additional hazardous waste that the facility did not identify on its previous Notification, either because the waste is a new waste handled by the facility, because it is a new hazardous waste designated by the Administrative Authority, or because the facility overlooked the waste in its previous Notification, or

As necessary to comply with any operating changes that occur during interim status.
 - 2) The owner or operator of a facility who fails to comply with the updating requirements of §3.1k) may be subject to termination of interim status with respect to those wastes not reported in duly filed Notifications.

- l) Incomplete applications -- Applications which lack information necessary for proper evaluation will be returned by the Administrative Authority to the operator within sixty days of receipt of application with a list of additional data required and the timeframe for submission of additional data.
 - m) Complete applications -- Applications which are complete will be accepted for review. Operators will be notified of such acceptance for review within sixty days of receipt of application.
 - n) Reapplications -- Any TSD facility with an effective permit shall submit a new permit application at least 180 days before the expiration date of the effective permit, unless permission for later filing is granted by the Administrative Authority. (The Administrative Authority shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
 - o) Application submitted -- All formal permit applications (Part II) shall be submitted in quintuplicate in the form presented in §§4.8, 4.9, 4.10, and 4.11 and in conformance with all requirements established by the Administrative Authority. An additional fifteen copies shall be provided for any application upon which an Adjudicatory Hearing is to be held by the Environmental Control Commission (ECC).
- 3.3 Scope of the Permit -- Owners and operators of TSD units must have permits during the active life (including the closure period) of the unit, for any unit which closes after January 26, 1983, during any post-closure care period required under Chapter 19, and during any compliance period specified under Chapter 18, including any extension of the compliance period under Chapter 18.
- a) Specific inclusions -- Owners and operators of certain facilities require hazardous waste permits as well as permits under other programs for certain aspects of the facility operation. Permits are required for:
 - 1) Facilities which treat, store, and/or dispose of hazardous wastes controlled by this program, as listed in §1.3, less listed exclusions in §1.3d).
 - 2) All associated surface facilities for injection wells that treat, store, and/or dispose of hazardous waste.
 - 3) Treatment, storage, or disposal of hazardous waste at facilities requiring a National Pollution Discharge Elimination System (NPDES) permit.
 - 4) Barges or vessels that dispose of hazardous waste under a valid Federal permit by ocean disposal and onshore hazardous waste treatment, or storage facilities associated with an ocean disposal operation. However, the facility will be deemed to have a permit for ocean disposal from the barge or vessel itself if it complies with the requirements of §3.3c).

b) Exclusions -- The following persons are not required to obtain a hazardous waste permit:

- 1) Facilities with injection wells that dispose of hazardous waste. Those wells are regulated by the Office of Conservation prior to February 1, 1984. After that date, such permits shall be issued by the Department of Environmental Quality pursuant to Act 97 of 1983.
- 2) Generators who accumulate hazardous waste in an environmentally sound manner, on-site for less than ninety days. [See discussion of accumulation time in §7.5e).]
- 3) Farmers who dispose of hazardous waste pesticides from their own use as provided in §1.3d)5).
- 4) Persons who own or operate facilities solely for the treatment, storage, or disposal of hazardous waste excluded by being small generators, if so specifically exempted by the Administrative Authority.
- 5) Owners or operators of totally enclosed treatment facilities (see definition in Chapter 2).
- 6) Owners and operators of elementary neutralization units or wastewater treatment units (see definitions in Chapter 2).
- 7) Transporters storing manifested shipments of hazardous waste in containers meeting all applicable requirements at a transfer facility for a period of ten days or less, if so approved by the Administrative Authority (see definition in Chapter 2).
- 8) Persons adding absorbent material to waste in a container and persons adding waste to absorbent material, provided that this action occurs at the time waste is first placed in the container and that the action complies with all applicable sections in Chapter 12.
- 9) A person is not required to obtain a permit for those activities he carries out to immediately contain or treat a spill of hazardous waste or material which, when spilled, becomes a hazardous waste. This exclusion is intended to relieve persons of the necessity of obtaining a RCRA permit where the treatment or storage of hazardous waste is undertaken as part of an immediate response to a spill. After the immediate response activities are completed, any treatment, storage, or disposal of spilled material or spill residue or debris that is undertaken must be covered by an interim status permit, an emergency permit, or an Emergency Action Authorization as provided in §5.1 for cases not otherwise requiring a permit under these rules and regulations.

c) Permits by rule

- 1) Notwithstanding any other provision, the following shall be deemed to have a permit if the conditions listed are met:

Has a valid Federal permit for ocean dumping which is duly authorized and meets permit conditions, hazardous waste regulations, identification numbers, uses the manifest system, reports manifest discrepancies, operating records, annual reports, and reports of any unmanifested waste. Where required by the Administrative Authority, evidence of the above conditions must be presented. On-shore storage or treatment facilities shall be permitted as required by the LHWR.

Has a valid permit for underground injection and is in compliance with such permit, and associated surface facilities are permitted under the LHWR.

- 2) Publicly owned treatment works -- The owner or operator of a POTW can accept hazardous waste for treatment, if the owner or operator has an NPDES permit, complies with the conditions of that permit, and complies with the following regulations:

Receives an identification number as provided in §3.2h)4);

Receives all hazardous waste under a designated manifest system;

Provides a mechanism by which discrepancies in manifested discharges and receipts can be reconciled;

Maintains a description and quantity of each hazardous waste received and subsequent treatment;

Submits quarterly reports summarizing activities relating to reception and treatment of each hazardous waste;

Submits a complete report within five days of any hazardous waste received on an unmanifested basis; and

Complies with all recordkeeping requirements of the LHWR.

The owner or operator can accept the hazardous waste if it meets all Federal, State, and local pretreatment requirements which would be applicable to the waste and if it is discharged into the POTW through a sewer, pipe, or similar conveyance.

3.4 Effect of a permit

- a) Compliance with a permit during its term constitutes compliance for purpose of enforcement. However, a permit may be suspended, modified, or terminated during its term for cause as set forth in §3.12.
- b) The issuance of a permit does not authorize any injury to persons or property, or invasion of other private rights, or any infringement of State or local law or regulations.
- c) The issuance of a permit does not convey any property rights of any sort, or any exclusive privilege.

3.5 Conditions applicable to all permits -- Each permit shall include permit conditions necessary to achieve compliance with the Act and these regulations, including each of the applicable requirements specified in the LHWR. In satisfying this provision, the Administrative Authority may incorporate applicable requirements of the LHWR directly into the permit or establish other permit conditions that are based on the LHWR. The following conditions apply to all Hazardous Waste Permits. All conditions applicable to permits shall be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to these regulations must be given in the permit.

- a) Duty to comply -- The permittee must comply with all conditions of this permit except that the permittee need not comply with the conditions of this permit to the extent and for the duration such noncompliance is authorized in an emergency permit. Any permit noncompliance constitutes a violation of the Act and any amendments and is grounds for enforcement action, permit termination, revocation and reissuance or modification, or denial of a permit renewal application.
- b) Duty to reapply -- If the permittee wishes to continue an activity regulated by the permit after the expiration date of the permit, the permittee must reapply for the permit as required in §3.2n). If the Administrative Authority does not issue a final decision on the reapplication on or before the expiration date of the permit, it shall remain in effect until the Administrative Authority issues a final decision.
- c) 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.
- d) Duty to mitigate -- The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.
- e) Proper operation and maintenance -- The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures.

This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

- f) Permit actions -- This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

- g) Property rights -- This permit does not convey any property rights of any sort, or any exclusive privilege.
- h) Duty to provide information -- The permittee shall furnish to the Administrative Authority, within a reasonable time, any information which may be requested to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish, upon request, copies of records required to be kept by this permit.
- i) Inspection and entry -- The permittee shall allow the Administrative Authority, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:
 - 1) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
 - 2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - 3) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
 - 4) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the appropriate Act, any substances or parameters at any location.
- j) Monitoring and records
 - 1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
 - 2) All monitoring information including all calibration and maintenance records, all original chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit and all records of data used to complete the permit application shall be maintained through the active life (including operating, closure, and post-closure periods) of the facility.
 - 3) Records of monitoring information shall include:
 - The date, exact place, and time of sampling or measurements;
 - The individual(s) who performed the sampling or measurements;
 - The date(s) analyses were performed;
 - The individual(s) who performed the analyses;
 - The analytical techniques of methods used; and

The results of such analyses.

- k) Signatory requirement -- All applications, reports, or information submitted to the Administrative Authority shall be signed and certified (see also §4.4).

1) Reporting requirements

- 1) Planned changes -- The permittee shall give notice to the Administrative Authority, as soon as possible, of any planned physical alterations or additions to the permitted facility.
- 2) Anticipated noncompliance -- The permittee shall give advance notice to the Administrative Authority of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- 3) For a new facility, the permittee may not treat, store, or dispose 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:

The permittee has submitted to the Administrative Authority 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

The Administrative Authority has inspected the newly modified facility and finds it is in compliance with the conditions of the permit or within fifteen days of the date of receipt of the letter in §3.2i)1), the permittee has not received notice from the Administrative Authority of his or her intent to inspect, prior inspection is waived and the permittee may commence treatment, storage, or disposal of hazardous waste.

- 4) Transfers -- The permit is not transferable to any person except with the written approval of the Administrative Authority. The Administrative Authority may require modification, or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary. In some cases, modification, or revocation and reissuance could be mandatory under the LHWR.
- 5) Monitoring reports -- Monitoring results shall be reported at the intervals specified elsewhere in the LHWR.
- 6) Compliance schedules -- Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule shall be submitted no later than fourteen days after each schedule date.
- 7) Twenty-four hour reporting -- The permittee shall report any non-compliance for which it is responsible which may endanger health or

the environment. Any information shall be provided orally as soon as possible as required by the "Notification Regulations and Procedures for Unauthorized Discharges and Spills."

- 8) Manifest discrepancy report -- If a significant discrepancy in a manifest is discovered, the permittee must attempt to reconcile the discrepancy. If not resolved within five days, the permittee must submit a letter report including a copy of the manifest to the Administrative Authority.
- 9) Unmanifested waste report -- An unmanifested waste report must be submitted to the Administrative Authority within five days of receipt of unmanifested waste.
- 10) Annual report -- An annual report must be submitted covering facility activities during the previous calendar year.
- 11) Other noncompliance -- The permittee shall report all instances of noncompliance not reported under §§3.51)1), 3.51)2), 3.51)6), and 3.51)7) at the time monitoring reports are submitted. The reports shall contain the information listed in §§3.51)1) and 3.51)7).
- 12) Other information -- If the permittee becomes aware that he failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to the Administrative Authority, he shall promptly submit such facts or information.

3.6 Establishing permit conditions

- a) In addition to conditions required in all permits, the Administrative Authority shall establish conditions, as required on a case-by-case basis, under duration of permits, schedules of compliance, monitoring, for considerations under Federal law and to provide for and assure compliance with all applicable requirements of the LHWR and its regulations.
- b) New or reissued permits, modified, or revoked and reissued permits, shall incorporate each of the applicable requirements referenced in §3.5.
- c) All permit conditions shall be incorporated expressly, or with specific citation to the applicable regulations or specific permit requirements.

3.7 Requirements for recording and reporting of monitoring results -- All permits shall specify:

- a) Requirements concerning the proper use, maintenance, and installation, when appropriate, of monitoring equipment or methods (including biological monitoring methods when appropriate);
- b) Required monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including, when appropriate, continuous monitoring; and

- c) Applicable reporting requirements based upon the impact of the regulated activity ~~as specified in the LHR. Reporting shall be no less~~ frequent than specified in the regulations.
- 3.8 Duration of permit -- Standard hazardous waste permits shall be effective for a fixed term not to exceed ten years. The term of a permit shall not be extended by modification beyond the maximum duration specified in this section. The Administrative Authority may issue any permit for a duration that is less than the full allowable term under this section.
- 3.9 Availability and retention of records
- a) The Administrative Authority or his representative, upon presentation of proper credentials, shall have access to the premises of all facilities permitted and to all pertinent records, and shall have the right to take samples from any facility or waste stream covered under this permit, as provided in L.R.S. 30:1061.1.
- b) File copies of all manifests, Annual reports, Exception reports, waste tests or analyses, and other logs or records required hereunder shall be kept for Department inspection for a period of not less than three years from date of completion or receipt, whichever is later.
- 3.10 Confidentiality -- Information submitted as part of the permit application relating to proprietary processes or systems may be held confidential by the Administrative Authority in response to the following actions:
- a) Any information submitted pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form, or instructions, or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, the Administrative Authority may make the information available to the public without further notice.
- b) An indication of the degree of harm to the operator if this information is made public.
- c) A determination by the Administrative Authority that the operator's request meets requirements of the Act relating to confidentiality of information.
- d) Claims of confidentiality for the name and address of any permit applicant or permittee will be denied.
- 3.11 Modification of permits
- a) Any proposed major modification of a facility or a site, any change in wastes handled in either volume or composition, any other change in the site, facility, or operations which materially deviates from a permit or materially increases danger to the public health or the environment, and

any operator or ownership change must be reported in writing to the Administrative Authority prior to such an occurrence and a permit modification must be obtained in accordance with the application, public notice, and permit requirements of this chapter. The Administrative Authority may approve an ownership change (transfer of permit) based on the following factors:

- 1) Assumption of liability for existing violations;
- 2) Financial responsibility; and
- 3) Managerial competence.

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b) 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 under §3.12, or a minor modification made under §3.11c) to identify the new permittee and incorporate such other requirements as may be necessary.

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~~c)~~ Minor modifications of permits -- Upon the consent of the permittee, the Administrative Authority may modify a permit to make the corrections or allowances for changes in the permitted activity listed in this section. Any permit modification not processed as a minor modification under this section must be made for cause and with a draft permit and public notice as required in §3.12b)1). Minor modifications may only:

- 1) Correct typographical errors;
- 2) Require more frequent monitoring or reporting by the permittee;
- 3) Change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement;
- 4) Allow for a change in ownership or operational control of a facility where the Administrative Authority determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the Administrative Authority;
- 5) Change the list of facility emergency coordinators or equipment in the permit's contingency plan;
- 6) Change estimates of maximum inventory;
- 7) Change estimates of expected year of closure or schedules for final closure;
- 8) Approve periods longer than ninety days or 180 days under §§19.7a) and 19.7b);

- 9) Change the ranges of the operating requirements set in the permit to reflect the results of the trial burn; provided that the change is minor;
- 10) Change the operating requirements set in the permit for conducting a trial burn, provided that the change is minor;
- 11) Grant one extension of the time period for determining operational readiness following completion of construction, for up to 720 hours operating time for treatment of hazardous waste;
- 12) Change the treatment program requirements for land treatment units under §15.3 to improve treatment of hazardous constituents, provided that the change is minor;
- 13) Change any conditions specified in the permit for land treatment units to reflect the results of field tests or laboratory analyses used in making a treatment demonstration in accordance with Chapter 15, provided that the change is minor; or
- 14) Allow a second treatment demonstration for land treatment to be conducted when the results of the first demonstration have not shown the conditions under which the waste or wastes can be treated completely as required by §15.4a), provided that the conditions for the second demonstration are substantially the same as the conditions for the first demonstration.

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Suspension, modification, and termination of permits -- When the Administrative Authority receives any information (e.g., inspects the facility, receives information submitted by the permittee as required in the permit, receives a request for suspension or modification under this part, or conducts a review of the permit file), he may determine whether or not one or more of the causes listed in §§3.12a), 3.12b)3), or 3.12c)2) for suspension, modification, or termination exist. If cause exists, the Administrative Authority may suspend, modify, or terminate the permit accordingly, subject to the limitations of §§3.12a), 3.12b)3), or 3.12c)2), and may request an updated application, if necessary. Permits may be reviewed for potential modification, suspension, or termination either at the request of any interested person (including the permittee) or upon the Administrative Authority's initiative. However, permits may only be modified, suspended, or terminated for the reasons specified in §§3.12a), 3.12b)3) or 3.12c)2) or if the Administrative Authority receives notification of a proposed transfer of the permit [§3.51)4)]. All requests shall be in writing, and shall contain facts or reasons supporting the request.

If the Administrative Authority decides the request is not justified, he shall send the requester a brief written response giving a reason for the decision. Denials of requests for modification, revocation and reissuance, or termination are not subject to public notice, comment, or hearings. Denials by the Administrative Authority may be appealed to the Environmental Control Commission (ECC) in accordance with Act 97 of 1983.

a) Suspension

- 1) The Administrative Authority may temporarily suspend the operator's right to accept additional hazardous waste to treat, store, or dispose of until violations are corrected. If violations are corrected, the Administrative Authority may lift the enforcement. The Administrative Authority shall give notice to the operator, by registered mail, return receipt requested, of violation of the permit or Act, listing the specific violations. If the operator fails to comply with this notice by correcting the cited violations within thirty days from date of notice, the Administrative Authority may issue an order requiring compliance within a specified time, or may commence a civil action in the district court in the parish in which the violation occurred for appropriate relief, including a temporary or permanent injunction. If the operator fails to take corrective action within the time specified in the order, the Administrative Authority shall assess a civil penalty, and may suspend the permit, all pursuant to Chapter 1 of these regulations and the Act.
- 2) For major infractions of the terms of the permit, the Administrative Authority may suspend the permit and require;

The operator to cease accepting hazardous waste or contracting for its treatment, storage, or disposal; or

The operator to agree to a caretaker management of operations involving wastes which are being treated, stored, or have been disposed of on site. The caretaker management shall be selected by the Administrative Authority from the following:

Operator's personnel acting under supervision of the Administrative Authority; or

Independent management firm operating under Administrative Authority supervision; or

State operation.

The total cost of the caretaker management shall be borne by the operator, by revenues from operation, or by calling upon the closure fund set up for this purpose.

If the operator does not voluntarily agree to the caretaker management, appropriate legal action shall be taken by the Administrative Authority to institute the management operations to protect the public interest.

After exhausting all other remedies, the Administrative Authority shall request the Attorney General to secure court authority to close the site, using closure funds for this purpose.

- 3) The operator may request reconsideration of the suspension order. ~~The request shall stipulate the form requested: i.e., a staff conference, a public hearing, or an adjudicatory hearing.~~

b) Modification

- 1) If the Administrative Authority tentatively decides to modify a permit under §§3.11 or 3.12, he shall prepare a draft permit under §5.3c) incorporating the proposed changes, if the modification is major. The Administrative Authority may request additional information and, in the case of a modified permit, may require the submission of an updated permit application. When a permit is modified, only the conditions subject to modification are reopened.
- 2) If a permit modification satisfies the criteria in §3.11c) for "minor modifications," the permit may be modified without a draft permit or public review. Otherwise, a draft permit must be prepared and other procedures followed.
- 3) The following are causes for modification but not suspension or termination of permits:

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;

The Administrative Authority has received information that justifies the application of different permit conditions.

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. The owner or operator may request a permit modification for this cause only as follows:

For promulgation of amended standards or regulations, when the Administrative Authority has revised, withdrawn, or modified that portion of the regulation or on which the permit condition was based, or has approved a State action with regard to standards on which the permit condition was based, and a permittee requests modification in accordance with §3.12 within ninety days after notice of the action on which the request is based.

For judicial decisions, a court of competent jurisdiction has remanded and stayed promulgated regulations, if the remand and stay concern that portion of the regulations or guidelines on which the permit condition was based, and a request is filed by the permittee in accordance with §3.12 within ninety days of judicial remand.

The Administrative Authority 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 no reasonably available remedy.

4) The Administrative Authority may modify a permit;

When modification of a closure plan is required;

When the Administrative Authority receives the notification of expected closure;

When the Administrative Authority determines that extension of the ninety or 180-day periods, modification of the thirty-year post-closure period, continuation of security requirements, or permission to disturb the integrity of the containment system are unwarranted;

When the permittee has filed a request for a variance to the level of financial responsibility, or when the Administrative Authority demonstrates that an upward adjustment of the level of financial responsibility is required;

When the corrective action program specified in the permit under §18.11 has not brought the regulated unit into compliance with the groundwater protection standard within a reasonable period of time;

To include a detection monitoring program meeting the requirements of §18.9 when the owner or operator has been conducting a compliance monitoring program under §18.10 or a corrective action program under §18.11 and the compliance period ends before the end of the post-closure care period for the unit;

When a permit requires a compliance monitoring program under §18.10 but monitoring data collected prior to permit issuance indicate that the facility is exceeding the groundwater protection standard;

To include conditions applicable to units at a facility that were not previously included in the facility's permit; or

When a land treatment unit is not achieving complete treatment of hazardous constituents under its current permit conditions.

5) Suitability of the facility location will not be considered a cause for permit modification unless new information or standards indicate that a threat to human health or the environment exists which was unknown at the time of permit issuance.

c) Termination

- 1) If the Administrative Authority tentatively decides to terminate a permit under §3.12c)2), he shall issue a notice of intent to terminate. A notice of intent to terminate is a type of draft permit

which follows the same procedures as any draft permit prepared under §5.3c). ~~If a permit is terminated, the entire permit is~~ reopened and subject to revision before the permit can be reissued for a new term.

- 2) The Administrative Authority may terminate a permit during its term or deny a permit renewal application for the following causes:

Noncompliance by the permittee with any condition of the permit;

The permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time;

A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by termination; or

The Administrative Authority has received notification of a proposed transfer of the permit [see §3.51)4)].

- 3) The operator may request reconsideration of the termination order. The request shall stipulate the forum requested: i.e., a staff conference, a public hearing, or an adjudicatory hearing.
- 4) For major infractions of the terms of the permit, the Administrative Authority shall terminate the permit and require:

The operator to cease accepting hazardous waste or contracting for its treatment, storage, or disposal; or

The operator to agree to a caretaker management of operations involving wastes which are being treated, stored, or have been disposed of onsite. The caretaker management shall be selected by the Administrative Authority from the following:

Operator's personnel acting under supervision of the Administrative Authority; or

Independent management firm operating under Administrative Authority supervision; or

State operation.

- 5) The total cost of the caretaker management shall be borne by the operator, by revenues from operation, or by calling upon the closure fund set up for this purpose.
- 6) If the operator does not voluntarily agree to the caretaker management, appropriate legal action shall be taken by the Administrative Authority to institute the management operations to protect the public interest.

- 7) After exhausting all other remedies, the Administrative Authority shall request the Attorney General to secure court authority to close the site, using closure funds for this purpose.

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3.13 Compliance schedule for facilities existing on the effective date of these regulations

a) Applicability

- 1) The permit may, when appropriate, specify a schedule of compliance leading to compliance with the Act and any other regulations. Any schedules of compliance shall require compliance as soon as possible.
- 2) If a permit establishes a schedule of compliance which exceeds one year from the date of permit issuance, the schedule shall set forth interim requirements and the dates, except that:

The time between interim dates shall not exceed one year; or

If the time necessary for completion of any interim requirement is more than one year and is not readily divisible into stages for completion, the permit shall specify interim dates for the submission of reports of progress toward completion of the interim requirements and indicate a projected completion date; and

The permit shall be written to require that no later than fourteen days following such interim date and the final date of compliance, the permittee shall notify the Administrative Authority in writing of its compliance or non-compliance with the interim or final requirements. Surface facilities for hazardous waste UIC wells shall be written to require schedules of compliance not later than one year after the effective date of the permit.

- b) Alternate schedules of compliance -- A permit applicant or permittee may cease conducting regulated activities rather than continue to operate and meet permit requirements as follows:

- 1) If the permittee decides to cease conducting regulated activities at a given time within the term of a permit which has already been issued:

The permit may be modified to contain a new or additional schedule leading to timely cessation of activities; or

The permittee shall cease conducting permitted activities before non-compliance with any interim or final compliance schedule requirement already specified in the permit.

- 2) If the decision to cease conducting regulated activities is made before issuance of a permit whose term will include the termination date, the permit shall contain a schedule leading to termination which will insure timely compliance with applicable requirements.

- 3) If the permittee is undecided whether to cease conducting regulated activities, ~~the Administrative Authority may issue or modify~~ a permit to contain two schedules as follows:

Both schedules shall contain an identical interim deadline requiring a final decision on whether to cease conducting regulated activities no later than a date which ensures sufficient time to comply with applicable requirements in a timely manner, if the decision is to continue conducting regulated activities;

One schedule shall lead to timely compliance with all applicable requirements; and the second schedule shall lead to cessation of regulated activities by a date which will ensure timely compliance with all applicable requirements; and

Each permit containing two schedules shall include a requirement that after the permittee has made a final decision under this section, it shall follow the schedule leading to compliance if the decision is to continue conducting regulated activities, and follow the schedule leading to termination if the decision is to cease conducting regulated activities.

- 4) The applicant's or permittee's decision to cease conducting regulated activities shall be evidenced by a firm public commitment satisfactory to the Administrative Authority, such as a resolution of the board of directors of a corporation.

3.14 Fees -- Fees are established by Fee System Rules and Regulations of the Administrative Authority.

CHAPTER 4

CONTENTS OF THE PERMIT APPLICATION FOR
TREATMENT, STORAGE, AND DISPOSAL FACILITIES

Sub-Chapter I

General Requirements For Permit Applications

- 4.1 Permit application -- Any person who is required to have a permit (including new applicants and permittees with expiring permits) shall complete, sign, and submit a permit application to the Administrative Authority as described in this section. Persons currently authorized with interim status shall apply for permits when required by the Administrative Authority. Persons covered by permits by rule [§3.3c)] need not apply. Procedures for applications, issuance, and administration of emergency permits are found in §5.2.

When a facility or activity is not owned and operated by one person, it is the operator's duty to obtain a permit. The owner must also sign the permit application.

- 4.2 Completeness -- The Administrative Authority shall not issue a permit before receiving a permit application except for permits by rule [§3.3c)] or emergency permits (§5.2). The completeness of any application will be determined by the Administrative Authority and shall be judged independently of the status of any other permit application or permit for the same facility or activity.
- 4.3 Recordkeeping -- Applicants shall keep records of all data used to complete permit applications and of any supplemental information submitted under this Chapter, as required in §3.5j).

Sub-Chapter II

Signatories To Permit Applications and Reports,
Changes Of Authorizations, And Certifications

- 4.4 Applications -- All permit applications shall be signed as follows:
- a) For a corporation: By a principal executive officer or by a manager of one or more manufacturing, production, or operating facilities of a corporation if the facilities employ more than 250 persons or have gross national sales or expenditures exceeding \$25 million as long as the manager has been delegated the authority to sign permit applications in accordance with corporate procedures.
 - b) For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

c) For a municipality, State, Federal, or other public agency: By either a principal executive officer or ranking elected official.

- 4.5 Reports -- All reports required by permits, and other information requested by the Administrative Authority shall be signed by a person described in §4.4, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

The authorization is made in writing by a person described in §4.4; and the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and the written authorization is submitted to the Administrative Authority.

- 4.6 Changes in authorization -- If an authorization under §4.5 is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of §4.5 must be submitted to the Administrative Authority prior to or together with any reports, information, or applications to be signed by an authorized representative.

- 4.7 Certification -- Any person signing a document under §§4.4 or 4.5 shall make the following certification: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Certification of an owner who is not the operator: "I certify that I understand that this application is submitted for the purpose of obtaining a permit to operate a hazardous waste management facility on the property as described. As owner of the property/facility, I understand fully that the facility operator and I are jointly and severally responsible for compliance with both the LHW, and any permit issued pursuant to those regulations." For owners of land disposal facilities, add: "I further understand that I am responsible for providing the notice in the deed to the property required by §19.13."

Sub-Chapter III Part I Information Requirements

- 4.8 Part I information requirements -- All applicants for TSD permits shall provide the following information to the Administrative Authority, using the application form provided. Other formatting requirements may be specified by the Administrative Authority:

a) Date of application;

- b) EPA identification number;
- c) A brief description of the nature of the business;
- d) The activities conducted by the applicant which require it to obtain a TSD permit;
- e) Name, mailing address, and location of the facility for which the application is submitted;
- f) The latitude and longitude of the facility and a legal description of the site;
- g) Up to four SIC codes which best reflect the principal products or services provided by the facility;
- h) An indication of whether the facility is new or existing and whether it is a first or revised application;
- i) The operator's name, address, telephone number, ownership status, and status as Federal, State, private, public, or other entity;
- j) Owner's name, address, and phone number if different from operator's;
- k) Contact: Name of individual to be contacted concerning hazardous waste management;
- l) Telephone number of contact;
- m) Whether the facility is located on Indian lands;
- n) A listing of all permits or construction approvals received or applied for under any of the following programs:
 - 1) Hazardous waste management program;
 - 2) Underground Injection Control (UIC) program;
 - 3) National Pollution Discharge Elimination System (NPDES) program;
 - 4) Prevention of Significant Deterioration (PSD) program under the Federal Clean Air Act;
 - 5) Nonattainment program under the Clean Air Act;
 - 6) National Emission Standards for Hazardous Air Pollutants (NESHAP) preconstruction approval under the Clean Air Act;
 - 7) Ocean dumping permits under the Marine Protection Research and Sanctuaries Act;
 - 8) Dredge or fill permits under Section 404 of the Federal Clean Water Act (CWA); or

- 9) Other relevant environmental permits.
- o) A topographic map (or other map if a topographic map is unavailable) extending two miles beyond the property boundaries of the facility indicating the following; each hazardous waste treatment, storage, and disposal facility; 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;
 - p) For existing facilities, a scale drawing of the facility showing the location of all past, present, and future treatment, storage, and disposal areas;
 - q) For existing facilities, photographs of the facility clearly delineating all existing structures; existing treatment, storage, and disposal areas; and sites of future treatment, storage, and disposal areas;
 - r) A description of the processes to be used for treating, storing, and disposing of hazardous waste, and the design capacity of these items;
 - s) A specification of the hazardous wastes listed or designated to be treated, stored, or disposed of at the facility; an estimate of the quantity of such wastes to be treated, stored, or disposed of annually; and a general description of the processes to be used for such wastes;
 - t) Status: Ownership status of existing site or land for proposed site (Federal, State, Private, Public, Other);
 - u) Operation status;
 - v) List other company hazardous waste operations in Louisiana (permitted or non-permitted and current or abandoned);
 - w) List other states in which hazardous waste operations are or have been conducted;
 - x) Zoning of site, if applicable; and
 - y) Comments.

Sub-Chapter IV
Part II General Permit Information Requirements

- 4.9 Part II information requirements (the formal permit application) -- The formal permit application information requirements presented below reflect the standards promulgated in the LHWR. These information requirements are necessary in order to determine compliance with all standards. Responses and exhibits shall be numbered sequentially according to the technical standards. The permit application must describe how the facility will comply with each of the sections of Chapters 9 through 20, and 22. Information required in the formal permit application shall be submitted to the Administrative Authority and signed in accordance with requirements in §4.5. The description

must include appropriate design information (calculations, drawings, specifications, data, etc.) and administrative details (plans, flow charts, decision trees, manpower projections, operating instructions, etc.) to permit the Administrative Authority to determine the adequacy of the hazardous waste permit application. Certain technical data, such as design drawings, specifications and engineering studies shall be certified by a registered professional engineer. If a section does not apply, the permit application must state it does not apply and why it does not apply. This information is to be submitted using the same numbering system and in the same order used in these regulations.

- a) A general description of the facility including hours of operation/day and days/week;
- b) A topographic map or maps showing a distance of 1000 feet around the facility at a scale of 2.5 centimeters (1 inch) equal to not more than 61.0 meters (200 feet). Contours must be shown on the map. The contour interval must be sufficient to clearly show the pattern of surface water flow in the vicinity of and from each operational unit of the facility. The map or maps shall clearly show the following:
 - 1) Map scale and date;
 - 2) Orientation of the map (north arrow);
 - 3) 100-year floodplain area;

[Comment: Owners and operators of all facilities shall provide an identification of whether the facility is located within a 100-year floodplain and a flood hazard map (Corps of Engineers or Department of Housing and Urban development). 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. Where maps for the National Flood Insurance Program produced by 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 if the facility is within the 100-year floodplain, and if so located, what the 100-year flood elevation would be.]

- 4) Surface waters including intermittent streams and surface flow through the site and a map of the potentiometric surface for aquifers within 100 feet of lowest elevation of disposal cells, or other facilities containing hazardous waste, from 1000 feet upstream to 1000 feet downstream, where practicable. Included should be a general area map and cross sections indicating the extent of freshwater sands, and the degree of isolation from waste sources by confining layers of clay;

- 5) Surrounding land uses (residential, commercial, agricultural, recreational, public) such as schools, hospitals, libraries etc.;

[Comment: A map or aerial photograph showing surrounding land use for the area within two miles of the site is required.]

- 6) Legal boundaries of the TSD facility site;

- 7) Access control (fences, gates);

- 8) Injection and withdrawal wells both on site and off site;

[Comment: A map of all known wells, operating or abandoned, on the site and within two miles of the site perimeter as required in §4.8o), including the depth of wells, amount of pumpage, water level depth (annual maximum and minimum), and water analysis from the water well nearest the disposal site is also required.]

- 9) The proposed location of groundwater monitoring wells as required under §§18.8a) and 18.8b).

- 10) The proposed "point of compliance" as defined under §18.6;

- 
- 11) Buildings, treatment, storage, or disposal operations; or other structures (recreation areas, runoff control systems, access and internal roads, storm sanitary, and process sewerage systems, loading and unloading areas, fire control facilities, utilities, security facilities, etc.);

- 12) Barriers for drainage or flood control;

- 13) Location of operational units within the TSD facility site, where hazardous waste is (or will be) treated, stored, or disposed of (including equipment cleanup areas). (For large TSD facilities, the Administrative Authority may allow the use of other scales on a case-by-case basis); and

- 14) Natural features affecting off-site drainage patterns, transportation, utilities, and location of effluent discharges.

- c) Site layout and facility design when phased construction is planned; the plans must indicate each phase and an accompanying schedule of construction;
- d) Chemical and physical analyses of the hazardous wastes to be handled at the facility which must be known to treat, store, or dispose of the wastes properly;
- e) A copy of the waste analysis plan required by §9.10b);

- f) A description of the security procedures (including entry control, hours ~~manned, lighting, monitoring, and other procedures to prevent~~ unauthorized entry) and equipment required by §9.4 or a justification demonstrating the reasons for requesting a waiver of this requirement;
- g) A copy of the general inspection schedule required by §9.5b); including, where applicable, as part of the inspection schedule, specific requirements in §§11.3, 12.5, 13.5b), 14.4c), 15.2g), 16.4c), 17.10b), and 17.10c);
- h) A justification of any request for a waiver(s) of the preparedness and prevention requirements of §9.6;
- i) A copy of the contingency plan required by §9.7;
- j) A description of procedures, structures, or equipment used at the facility to:
 - 1) Prevent hazards in unloading operations (for example, ramps, special forklifts);
 - 2) Prevent runoff from hazardous waste handling areas to other areas of the facility or environment, or to prevent flooding (for example, berms, dikes, trenches);
 - 3) Monitoring leachate control;
 - 4) Prevent contamination of water supplies;
 - 5) Monitor water and air pollution affecting area outside site;
 - 6) Mitigate effects of equipment failure, power outages, inclement weather, or other abnormal conditions; and
 - 7) Prevent undue exposure of personnel to hazardous waste (for example, protective clothing).
 - 8) Prevent accidental ignition or reaction of ignitable, reactive, or incompatible wastes as required to demonstrate compliance with §9.9;
- k) Traffic pattern, estimated volume (number, types of vehicles) and control (for example, show turns across traffic lanes, and stacking lanes, if appropriate; describe access road surfacing and load bearing capacity; show traffic control signals);
- l) An outline of both the introductory and continuing training programs by owners or operators to prepare persons to operate or maintain the TSD facility in a safe manner as required to demonstrate compliance with §9.8. A list of general qualifications of key operating positions and a brief description of how training will be designed to meet actual job tasks in accordance with these requirements;

- m) A copy of the closure plan and, where applicable, the post-closure plan required by §§19.6 and 19.12. Include where applicable as part of the plans, specific requirements in §§11.6, 12.9, 13.8, 14.11, 15.10, 16.6, and 17.11;
- n) For existing facilities, documentation that a notice has been placed in the deed or appropriate alternate instrument as required by §19.13;
- o) The most recent closure cost estimate for the facility plus a copy of the financial assurance mechanism adopted in compliance with Chapter 20;
- p) Where applicable, the most recent post-closure cost estimate for the facility plus a copy of the financial assurance mechanism adopted in compliance with Chapter 20;
- q) Where applicable, a copy of the insurance policy or other documentation which comprises compliance with the requirements of Chapter 20. For a new facility, documentation showing the amount of insurance meeting the specification of Chapter 20 that the owner or operator plans to have in effect before initial receipt of hazardous waste for treatment, storage, or disposal;
- r) Where appropriate, proof of coverage by a State financial mechanism in compliance with Chapter 20;
- s) A wind rose (i.e., prevailing wind speed and direction) and the source of the information;
- t) Facility location information:
 - 1) Seismic standard -- In order to determine the applicability of the seismic standard, §9.2a)3), the owner or operator of the facility must identify the political jurisdiction (e.g., parish, township, or election district) in which the facility is proposed to be located;

The owner or operator shall demonstrate compliance with the seismic standard. This demonstration may be made using either published geologic data (including Federal hazardous waste regulations) or data obtained from field investigations carried out by the applicant. The information provided must be of such quality to be acceptable to geologists experienced in identifying and evaluating seismic activity. The information submitted must show that either:

No faults which have had displacement in Holocene time are present, or no lineations which suggest the presence of a fault (which have displacement in Holocene time) within 3,000 feet of a facility are present, based on data from:

Published geologic studies, including cites from federal regulations which demonstrate that the requirements of this section do not apply,

Aerial reconnaissance of the area within a five-mile radius from the facility,

An analysis of aerial photographs covering a 3,000-foot radius of the facility, and

If needed to clarify the above data, a reconnaissance based on walking portions of the area within 3,000 feet of the facility, or

No faults may pass within 200 feet of the portions of the facility where treatment storage, or disposal of hazardous waste will be conducted based on data from a comprehensive geologic analysis of the site. Unless a site analysis is otherwise conclusive concerning the absence of faults within 200 feet of such portions of the facility, data shall be obtained from a subsurface exploration (trenching) of the area within a distance no less than 200 feet from portions of the facility where treatment, storage, or disposal of hazardous waste will be conducted. Such trenching shall be performed in a direction that is perpendicular to known faults (which have had displacement in Holocene time) passing within 3,000 feet of the portions of the facility where treatment, storage, or disposal of hazardous waste will be conducted. Such investigation shall document with supporting maps and other analyses, the location of any faults found, and shall be certified by a Registered Professional Engineer or geologist.

- 2) One hundred-year floodplain -- Owners and operators of all facilities shall provide an identification of whether the facility is located within a 100-year floodplain.

Owners and operators of facilities located in the 100-year floodplain must provide the following information:

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.

Engineering analysis to indicate the various hydrodynamic and hydrostatic forces expected to result at the site as a consequence of a 100-year flood;

Structural or other engineering studies showing the design of operational units (e.g., tanks, incinerators) and flood protection devices (e.g., floodwalls, dikes) at the facility and how these will prevent washout;

If applicable, and in lieu of the above two provisions, a detailed description of procedures to be followed to remove hazardous waste to safety before the facility is flooded, including:

Timing of such movement relative to flood levels, including estimated time to move the waste, showing that such movement can be completed before floodwaters reach the facility;

A description of the location(s) to which the waste will be moved and demonstration that those facilities are permitted to receive hazardous waste in accordance with the LHWR;

The planned procedures, equipment, and personnel to be used and the means to ensure that such resources will be available in time for use; and

The potential for accidental discharges of the waste during movement.

Existing facilities NOT in compliance with §9.2b)3) shall provide a plan showing how the facility will be brought into compliance and a schedule for compliance.

3) Site geology, including:

- 270.14 (c)(2)
- a) Certification by a geologist or licensed engineer specializing in geotechnical engineering that the ground and subsurface conditions at the site are acceptable for the planned purposes of the facility;
 - b) Identification of the uppermost aquifer and aquifers hydraulically interconnected beneath the facility property, including ground water flow direction and rate, and the basis for such identification (i.e., the information obtained from hydrogeologic investigations of the facility area);
 - c) Soil types, textures, and conditions to depth of thirty feet below lowest elevation of planned disposal cells for impoundments, landfill and land treatment facility based on test holes at 200-foot intervals (or greater or less intervals if acceptable to the Administrative Authority);
 - d) Logs of test holes and wells, including soil samples for each pertinent strata analyzed for soil type, texture, permeability, and other pertinent characteristics; and
 - e) General area map and cross sections indicating the extent of freshwater sands, and the degree of isolation of these aquifers to a depth of 1,000 feet from waste sources by confining layers of clay.
- 270.14 (c)(3)
- f) On a topographic map, a delineation of the waste management area, the property boundary, the proposed "point of compliance" as defined under §§18.6, the proposed location of groundwater monitoring wells as required under §§18.8a), and 18.8b).

- g) Detailed plans and an engineering report describing the proposed ~~groundwater monitoring program to be implemented~~ to meet the requirements of §§18.8a) through 18.8h).

4) Site hydrology, including:

- a) Travel times in feet/day for normal drainage of each natural surface drainage system within 1,000 feet of the property;

- b) Climate factors:

The twenty-four hours/twenty-five year storm rainfall;

Maximum, minimum, and average temperature/month for past ten years;

Impact of previous hurricanes on area;

Comparison of rainfall and evapotranspiration rates; and

Prevailing wind direction (provide wind rose).

- c) 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:

Delineates the extent of the plume on the topographic map such as required under §4.11b)4); and

Identifies the concentration of each material in Table 1 of Chapter 17 constituent throughout the plume or identifies the maximum concentrations of each such constituent in the plume.

- d) If the presence of hazardous constituents have not been detected in the groundwater at the time of permit application, the owner or operator must submit sufficient information, supporting data, and analyses to establish a detection monitoring program which meets the requirements of §18.9. This submission must address the following items specified under §18.9:

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;

A proposed groundwater monitoring system;

Background values for each proposed monitoring parameter or constituent, or procedures to calculate such values; and

A description of proposed sampling, analysis, and statistical comparison procedures to be utilized in evaluating groundwater monitoring data.

- e) If the presence of hazardous constituents has been detected in the groundwater at the point of compliance at the time of permit application, the owner or operator must submit sufficient information, supporting data, and analyses to establish a compliance monitoring program which meets the requirements of §18.10. The owner or operator must also submit an engineering feasibility plan for a corrective action program necessary to meet the requirements of §18.11, except as provided in §18.9h)5). To demonstrate compliance with §18.10, the owner or operator must address the following items:

A description of the wastes previously handled at the facility;

A characterization of the contaminated groundwater, including concentrations of hazardous constituents;

A list of hazardous constituents for which compliance monitoring will be undertaken in accordance with §§18.8 and 18.9;

Proposed concentration limits for each hazardous constituent, based on the criteria set forth in §18.5a), including a justification for establishing any alternate concentration limits;

Detailed plans and an engineering report describing the proposed groundwater monitoring system, in accordance with the requirements of §18.8; and

A description of proposed sampling, analysis, and statistical comparison procedures to be utilized in evaluating groundwater monitoring data.

- f) If hazardous constituents have been measured in the groundwater which exceed the concentration limits established under §18.5, Table 1, or if groundwater monitoring conducted at the time of permit application under §§18.1 through 18.5 at the waste boundary indicates the presence of hazardous constituents from the facility in groundwater over background concentrations, the owner or operator must submit sufficient information, supporting data, and analyses to establish a corrective action program which meets the requirements of §18.11. However, an owner or operator is not required to submit information to establish a corrective action program if he demonstrates to the Administrative Authority that alternate concentration limits will protect human health and the environment after considering the criteria listed in §18.5. An owner or operator who is not required to establish a corrective action program for this reason must instead submit sufficient information to establish a compliance monitoring program which meets the requirements of §§18.10 and 4.11g)3). To demonstrate compliance with §18.11, the owner or operator must address, at a minimum, the following items:

A characterization of the contaminated groundwater, including concentrations of hazardous constituents;

The concentration limit for each hazardous constituent found in the groundwater as set forth in §18.5;

Detailed plans and an engineering report describing the corrective action to be taken; and

A description of how the groundwater monitoring program will demonstrate the adequacy of the corrective action.

5) Environmental factors, including:

- a) List all known historical sites, recreational areas, archaeological sites, wildlife areas, swamps and marshes, habitats for endangered species, and other sensitive ecological areas within 1000 feet of the site; and
- b) Indicate measures planned to protect such areas listed from detrimental impact from the operation of the proposed facility.

6) Geographical factors -- For an area within two miles of the proposed site, provide the following information:

- a) Map or aerial photograph showing all buildings identified as residential, commercial, industrial, or public (schools, hospitals, libraries, etc.);
- b) Population;
- c) Principal livelihood of residents for facilities located in rural areas;
- d) Land use; and
- e) Road network, with average daily traffic count and route of trucks which will transport waste to the facility.

7) Operations plan, including:

- a) Classification and estimated quantities of wastes to be handled;
- b) Methods and processes utilized:

Facility capacity for each disposal method;

Detailed description of each process or method;

Storage and disposal procedures:

Plans for receipt, checking, processing, segregation of incompatible wastes, and odor control; and

Life of each facility based on projected use;

Describe recordkeeping procedures, types of records to be kept, and use of the records by management to control the operation; and

Monitoring and recording of incoming wastes;

- u) Special requirements -- Administrative Authority may require additional provisions for special procedures or processes, for specific information for a supplementary environmental analysis, or for such information as may be necessary to enable the Administrative Authority to carry out his duties under other State laws.

CHAPTER 5

ADMINISTRATIVE PROCEDURES FOR TREATMENT, STORAGE, AND DISPOSAL FACILITY PERMITS

5.1 Reserved

5.2 Emergency permits -- Notwithstanding any other provision, in the event the Administrative Authority finds an imminent and substantial endangerment to human health or the environment, he may issue a temporary emergency permit (1) to a non-permitted facility to allow treatment, storage, or disposal of hazardous waste or (2) to a permitted facility to allow treatment, storage, or disposal of a hazardous waste not covered by an effective permit. This emergency permit:

- a) May be oral or written, if oral, it shall be followed in five days by a written emergency permit;
- b) Shall not exceed ninety days in duration;
- c) Shall clearly specify the hazardous wastes to be received, and the manner and location of their treatment, storage, or disposal;
- d) May be terminated by the Administrative Authority at any time without process if he determines that termination is appropriate to protect human health and the environment;
- e) Shall be accompanied by a public notice including:
 - 1) Name and address of the office granting the emergency authorization;
 - 2) Name and location of the permitted TSD facility;
 - 3) A brief description of the wastes involved;
 - 4) A brief description of the action authorized and reasons for authorizing it; and
 - 5) Duration of the emergency permit;
- f) Shall incorporate, to the extent possible and not inconsistent with the emergency situation, all applicable and appropriate requirements of the LHWR;
- g) The permittee need not comply with the conditions of an interim or standard permit to the extent and for the duration such noncompliance is authorized in an emergency permit.

5.3 Permit evaluation

a) Application distribution -- Upon acceptance of an application for review, the Administrative Authority will distribute copies of the application (Part I) for review and comment to: the public (filed with local libraries or other public facility), notification of which is to be published in a bulletin [see §5.6c)3)], and as an ad in a local newspaper; Water Pollution Division; Air Quality Division; Department of Health and Human Resources, Office of Health Services and Environmental Quality; Department of Wildlife and Fisheries; Office of Public Works of the Department of Transportation and Development; or the successors to any of the above; and to local governing authorities of any municipality and parish within whose territorial jurisdiction the facility or activity is located.

b) Review considerations

- 1) In conducting its review of the application the Administrative Authority will consider the purpose and use of facilities, operations and monitoring plan, capacity, closure, site suitability, financial responsibility, legal considerations, special considerations deemed necessary by the Administrative Authority on a site specific basis, and local zoning ordinances.
- 2) Comment from the public and involved local, parish, state, and federal agencies will be reviewed. The Administrative Authority may consider that the agencies that do not comment within forty-five days from the date the ad is published in the newspaper have no objection to the proposed operation.
- 3) The Administrative Authority will assist the operator in the modification of the permit application or facility design or operation by:

Conducting staff discussions with operator, designing engineer, and other principals to discuss reasons for denial;

Referencing to "state-of-the-art" procedures and methods which, if incorporated in the operation design, would allow permit reapplication; and

Conducting staff evaluations of objectionable features of application.

- 4) Initial compliance inspections shall be made as follows:

For existing facilities as a part of permit application evaluation;
or

For new facilities ready to begin operation, after a "Request to Perform Initial Inspection" is submitted by the operator to the Administrative Authority. This inspection determines that new construction was built in conformity with conditions of the Permit

by a certification from the operator and supervising engineer, and ~~actual Department inspection and evaluation~~

- 5) Order to proceed, or to continue with operation shall be given as follows:

The Administrative Authority will issue to existing facilities a Notice to Continue Operations, issue an interim permit for a specified length of time to continue, and cite measures which must be taken to satisfy the terms of the permit. Specific target dates will be listed in the permit and a report of compliance will be submitted as required to the Administrative Authority but in no case less than quarterly; or

To new facilities the Administrative Authority will issue a notice permitting operation under a standard permit or issue a list of modifications required, before an order to begin operation will be issued.

- 6) Mandatory provisions -- Operation of existing facilities during Department action on the permit application is permitted, in accordance with provisions of the Act, except that when the continued operation of an existing facility is determined by the Department to be causing or about to cause irreparable damage to the environment, or a serious threat to life or safety based on recognized criteria or standards, or both, the Administrative Authority shall institute immediate enforcement actions pursuant to §1.4 of these regulations and the Act. During the time period effective as of November 19, 1980, and to extend no longer than the date of issuance of an interim or standard permit, existing treatment, storage and disposal facilities are required to meet interim status standards, in addition to the requirements of prior permits issued before August 1, 1979. Failure to comply with applicable provisions of the interim status standards as set forth in Chapter 23 shall be a violation of these regulations.
- 7) If an applicant fails or refuses to correct deficiencies in the application, the permit may be denied and appropriate enforcement actions may be taken under the applicable statutory provisions.
- 8) The effective date of an application is the date on which the Administrative Authority notifies the applicant that the application is complete as provided in §3.2m).
- 9) For each application from a major TSD facility, the Administrative Authority shall, no later than the effective date of the application, prepare and mail a project decision schedule to the applicant. The schedule shall specify target dates by which the Administrative Authority intends to:

Prepare a draft permit;

Give public notice;

Complete the public comment period, including any public hearing;
and

Issue a final permit.

c) Draft permits

- 1) Once an application is complete, the Administrative Authority shall tentatively decide whether to prepare a draft permit or to deny the permit.
- 2) If the Administrative Authority tentatively decides to deny the permit, a notice of intent to deny shall be issued. A notice of intent to deny the permit is a type of draft permit which follows the same procedures as any draft permit prepared under §5.3c)4). If the Administrative Authority's final decision is that the tentative decision to deny the permit was incorrect, the notice of intent to deny shall be withdrawn and a draft permit under §5.3c)3) shall be prepared.
- 3) If the Administrative Authority decides to prepare a draft permit, he shall prepare a draft permit that contains the following information:
 - All conditions under §§3.5 and 3.6;
 - All compliance schedules under §3.13;
 - All monitoring requirements under §3.5j); and
 - All standards for treatment, storage, and/or disposal facilities and surface facilities for injection wells.
- 4) All draft permits prepared under this section shall be accompanied by a fact sheet [§5.3d)], and shall be based on the administrative record, publicly noticed (§5.6) and made available for public comment (§5.5). The Administrative Authority shall give notice of opportunity for a public hearing (§5.6), and respond to comments (§5.5).

d) Fact sheet

- 1) A fact sheet shall be prepared for every draft permit. The fact sheet shall briefly set forth principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. The Administrative Authority shall send this fact sheet to the applicant and, on request, to any other person.
- 2) The fact sheet shall include, when applicable:
 - A brief description of the type of facility or activity which is the subject of the draft permit;

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 brief summary of the basis for the draft permit conditions including references to applicable statutory or regulatory provisions and appropriate supporting references to the administrative record;

Reasons why any requested variances or alternatives to required standards do or do not appear justified;

A description of the procedures for reaching a final decision on the draft permit including:

The beginning and ending dates of the comment period and the address where comments will be received;

Procedures for requesting a hearing and the nature of that hearing;

Any other procedures by which the public may participate in the final decision; and

Name and telephone number of a person to contact for additional information.

5.4 Issuance and effective date of permit

- a) After the close of the public comment period under §5.5 on a draft permit, the Administrative Authority shall issue a final permit decision. The Administrative Authority shall notify the applicant and each person who has submitted written comments or requested notice of the final permit decision. This notice shall include reference to the procedures for appealing a decision. For the purpose of this section, a final permit decision means a final decision to issue, deny, modify, revoke and reissue or terminate a permit.
- b) A final permit decision shall become effective thirty days after the service of notice of the decision under §5.4a), unless:
 - 1) A later effective date is specified in the decision; or
 - 2) Review is requested under §3.12a)3); or
 - 3) No comments requested a change in the draft permit, in which case the permit shall become effective immediately upon issuance.

5.5 Public comments and requests for public hearings

- a) During the public comment period provided under §5.6c)2), any interested person may submit written comments on the draft permit or the permit application 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 §5.5b).

- b) Response to comments -- At the time that any final permit decision is issued, the Administrative Authority shall issue a response to comments.
 - 1) This response shall specify which provisions, if any, of the draft permit have been changed in the final permit decision, and the reasons for the change, and briefly describe and respond to all significant comments on the draft permit or the permit application raised during the public comment period, or during any hearing.
 - 2) The response to comments shall be available to the public.

5.6 Hearings and notices

a) Adjudicatory hearings

- 1) Adjudicatory or adjudicative hearings shall be conducted in accordance with the Louisiana Administrative Procedures Act (LRS 49:91 et seq.) for the following:

All permit applications for commercial hazardous waste disposal facilities; and

In instances where the Administrative Authority determines that equity and justice requires an adjudication.

- 2) Any person possessing a real interest that might be adversely affected by action of the Administrative Authority may petition the Administrative Authority, in writing, to hold an adjudicative hearing. The Administrative Authority shall accept or deny the petition, in writing, giving reasons for the decision, prior to taking the action for which a complaint has been made.
- 3) The holding of an adjudicative hearing shall not limit or prevent the holding of non-adjudicatory, fact-finding hearings on the same subject matter.

b) Public hearings

1) Applicability

The Administrative Authority shall hold a public hearing whenever written notice of opposition to a draft permit and a request for a hearing is received within forty-five days of public hearing notice. Whenever practicable, the Administrative Authority shall schedule a hearing under this section at a location convenient to the nearest population center to the proposed facility.

The Administrative Authority may also hold a public hearing whenever for instance, such a hearing might clarify one or more issues involved in the permit decision.

Public notice of the hearing shall be given as specified in §5.6c)1).

- 2) For any public hearing, the Administrative Authority shall designate a Presiding Officer who shall be responsible for its scheduling and orderly conduct.
 - 3) Any person may submit oral or written statements and data concerning the draft permit. Reasonable limits may be set upon the time allowed for oral statements, and written submissions may be required. The public comment period under §5.6c)2) shall automatically be extended to the close of any public hearing under this section. The hearing officer may also extend the comment period by so stating at the hearing.
 - 4) A tape recording or written transcript of the hearing shall be made available to the public.
- c) Public notice of permit actions and public comment period

1) Scope

The Administrative Authority shall give public notice that the following actions have occurred:

A permit application has been tentatively denied under §5.3c)2);

A draft permit has been prepared under §5.3c)3);

A hearing has been scheduled under §5.6b)1); or

An appeal has been granted under §3.12a)3).

No public notice is required when a request for permit modification, revocation and reissuance, or termination is denied under §3.12. Written notice of that denial shall be given to the requester and to the permittee.

Public notices may describe more than one permit or permit action.

2) Timing

Public notice of the preparation of a draft permit (including a notice of intent to deny a permit application) required under §§5.3c)2) and 5.3c)4) shall allow at least forty-five days for public comment.

Public notice of a public hearing shall be given at least forty-five days before the hearing. (Public notice of the hearing may be given at the same time as public notice of the draft permit and the two notices may be combined.)

- 3) Methods -- Public notice of activities described in §5.6c)1) shall be given by the following methods:

By mailing a copy of a notice to the following persons (any person otherwise entitled to receive notice under this paragraph may waive his or her rights to receive notice for any classes and categories of permits):

- 1 The applicant;
- 2 Parish governing authority and municipal government where a facility will be located within its jurisdiction;
- 3 Any other agency which the Administrative Authority knows has issued or is required to issue a permit for the same facility or activity;
- 4 Federal and State agencies with jurisdiction over fish, shellfish, and wildlife resources and over coastal zone management plans, the Advisory Council on Historic Preservation, State Historic Preservation Officers, and other appropriate government authorities, including any affected states;
5. Persons on a mailing list, including:
 - ~~1~~ Those who request in writing to be on the list;
 - 2 Those solicited for "area lists" on the basis of their participation in past permit proceedings in that area; and
 - 3 Those on the list as a result of notification to the public of the opportunity to be put on the mailing list through periodic publication in the public press and in such publications as regional and state funded newsletters, environmental bulletins, or state law journals. The Administrative Authority may update the mailing list from time to time by requesting written indication of continued interest from those listed and the Administrative Authority may delete from the list the name of any person who fails to respond to such a request.
- 6 Also, public notices will be mailed to subscribers to a bulletin issued periodically by the Administrative Authority. Subscribers will include public officials, industries who operate under Department permits, and interested individuals and organizations who request that their name be added to the list. The bulletin will contain information concerning permit applications, actions on permits, suspension and revocation orders,

enforcement actions, and other information of public interest concerning the hazardous waste program.

For standard permits or major modifications, publication of a notice in a daily or weekly major local newspaper of general circulation within the area affected by the facility or activity and broadcast over local radio stations. The Administrative Authority may require the applicant to provide for and pay for the notifications and submit proof thereof.

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.

4) Contents

All public notices issued under this part shall contain the following minimum information:

Name and address of the office processing the permit action for which notice is being given;

Name and address of the permittee or permit applicant and, if different, of the facility or activity regulated by the permit;

A brief description of the business conducted at the facility or activity described in the permit application or the draft permit;

Name, address, and telephone number of a person from whom interested persons may obtain further information, including copies of the draft permit or draft general permit, as the case may be, statement of basis or fact sheet, and the application;

A brief description of the comment procedures required by §5.6 and the time and place of any hearing that will be held, including a statement of procedures to request a hearing (unless a hearing has already been scheduled) and other procedures by which the public may participate in the final permit decision; and

Any additional information considered necessary or proper.

Public notices for hearings -- In addition to the general public notice described in §5.6c)4), the public notice of a hearing under §5.6 shall contain the following information:

Reference to the date of previous public notices relating to the permit;

Date, time, and place of the hearing; and

A brief description of the nature and purpose of the hearing, including the applicable rules and procedures.

- 5) In addition to the general public notice described in §5.6c)3), all persons identified in paragraphs of this section shall be mailed a copy of the fact sheet or statement of basis, the permit application (Part I), and the draft permit (if any).

CHAPTER 6

MANIFEST SYSTEM FOR TSD FACILITIES

- 6.1 Applicability -- The regulations in this Chapter apply to owners and operators of both on-site and off-site TSD facilities, except owners and operators of on-site facilities that do not receive any hazardous waste from off-site sources and as otherwise provided in §1.3d).
- 6.2 Manifest requirements
 - a) The manifest must contain all of the following information:
 - 1) A manifest document number;
 - 2) The generator's name, mailing address, telephone number, and EPA identification number;
 - 3) The name and EPA identification number of each transporter;
 - 4) The name, address, and EPA identification number of the designated facility;
 - 5) The description of the waste(s) (e.g., proper shipping name, hazard class, EPA hazardous waste number, etc.) required by Louisiana Department of Public Safety (LDPS) regulations in §§172.101, 172.202, and 172.203; and
 - 6) The total quantity of each hazardous waste by units of weight in tons and the type and number of containers as loaded into or onto the transport vehicle. If the weight is unknown, the volume and estimated weight should be provided.
 - b) The following certification must appear on the manifest: "This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Louisiana Department of Public Safety, the Louisiana Department of Natural Resources, the U.S. Department of Transportation, and the U.S. EPA."
 - c) The manifest must consist of at least the number of copies which will provide the generator, each transporter, and the owner or operator of the designated facility with one copy each for their records and two completed copies to be returned to the generator.
 - d) The manifest form used must be approved by the Administrative Authority.

6.3 Use of the manifest system

- a) If a facility receives a hazardous waste accompanied by a manifest, the owner or operator, or his agent, must:
 - 1) Sign and date each copy of the manifest to certify that the hazardous waste covered by the manifest was received;
 - 2) Note any significant discrepancies in the manifest [as defined in §6.4a] on each copy of the manifest. The Administrative Authority does not intend that the owner or operator of a facility whose procedures under §9.10c) include waste analysis must perform that analysis before signing the manifest and giving it to the transporter. Section 6.4b), however, requires reporting an unreconciled discrepancy discovered during later analysis;
 - 3) Immediately give the transporter at least one copy of the signed manifest;
 - 4) Within seven days after the delivery, send a copy of the manifest to the generator; and
 - 5) Retain at the facility a copy of each manifest for at least three years from the date of delivery or final disposal, whichever is later. After three years, a summary, extract, or microfilm copy of the information shall be retained by the facility to keep records of waste received.
- 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:
 - 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;
 - 2) Note any significant discrepancies [as defined in §6.4a)] in the manifest or shipping paper (if the manifest has not been received) on each copy of the manifest or shipping paper. The Administrative Authority does not intend that the owner or operator of a facility whose procedures under §9.10c) include waste analysis must perform that analysis before signing the shipping paper and giving it to the transporter. Section 6.4b), however, requires reporting an unreconciled discrepancy discovered during later analysis;
 - 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);
 - 4) Within thirty 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 days after delivery, the owner or operator, or his agent, must send a copy of the shipping paper signed and dated to the generator. Section 7.4d)3) requires the generator to send three copies of the manifest to the facility when hazardous waste is sent by water (bulk shipment); and

- 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 years from the date of delivery or final disposal, whichever is later.
- 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 §7.4.

6.4 Manifest discrepancies

- 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: (1) For bulk waste, variations greater than ten percent in weight; and (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.
- b) Upon discovering 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 five days after receiving the waste, the owner or operator must immediately submit, to the Administrative Authority, a letter describing the discrepancy and attempts to reconcile it, and a copy of the manifest or shipping paper at issue.

- 6.5 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 without an accompanying shipping paper as described in §8.4e)2), and if the waste is not excluded from the manifest requirement by Chapter 21, then the owner or operator must prepare and submit a single copy of a report to the Administrative Authority within fifteen days after receiving the waste. Such unmanifested waste storage, treatment, or disposal shall be covered by the facility permit or an Emergency permit (§5.2), and treatment or disposal shall not occur until approval of the Administrative Authority is given. The unmanifested waste report must be submitted on the form provided by the Administrative Authority. Such report must be designated "Unmanifested Waste Report" and include the following information:

- a) The EPA identification number, name, and address of the facility;
- b) The date the facility received the waste;

- c) The EPA identification number, name, and address of the generator and the transporter, if available;
- d) A description and the quantity of each unmanifested hazardous waste and facility received;
- e) The method of treatment, storage, or disposal for each hazardous waste;
- f) The certification signed by the owner or operator of the facility, or his authorized representative; and
- g) A brief explanation of why the waste was unmanifested, if known. Small quantities of hazardous waste are excluded from regulation under Chapter 21 and do not require a manifest. When a facility receives unmanifested hazardous wastes that qualify for the exemption, the Administrative Authority suggests that the owner or operator obtain from each generator a certification that the waste qualifies for the exemption. Otherwise, the agency suggests that the owner or operator file an unmanifested waste report for the hazardous waste movement.

6.6 Manifest forms

- a) A manifest form containing the information required by these regulations shall be used for all shipments of hazardous waste under this regulation and shall be completed in full by the proper parties.
- b) Sample manifest forms will be available upon request from the Department.
- c) The manifest form shall contain the proper EPA identification number for the generator, transporter, and disposer and the proper EPA waste identification number(s).

6.7 Manifest document flow

- a) The generator initiates the manifest (original and at least four copies) as required in §6.2. After the transporter signs the manifest, the generator retains one copy for his files and the original and all other copies accompany the hazardous waste shipment.
- b) The transporter secures the hazardous waste facility operator's signature upon delivery of waste, retains one copy for his files, and gives the original and two copies to the hazardous waste facility operator.
- c) The hazardous waste facility operator fills out his portion, retains a copy for his files and mails the original and final copy to the generator no later than seven days after delivery of the hazardous waste.
- d) The generator files the copy and mails the final completed original to the Department no later than seven days after receiving the completed manifest from the hazardous waste facility operator.

- e) The generator, transporter, and hazardous waste facility operator shall ~~maintain file copies of the manifest for a period not less than~~ three years for Department inspection, as required in §3.9b).
 - f) The generator, transporter, and hazardous waste facility operator each shall submit an annual report to the Department including manifest numbers and total quantity by type of waste handled, and its disposition. The report shall cover the preceding calendar year and shall be submitted by March 1.
 - g) The signing of the manifest by the generator, transporter, or hazardous waste facility operator certifies that to the best of his knowledge, his portion of the manifest is accurately and correctly filled out. The generator further certifies that the material is properly packaged, marked, and labelled and is in a proper container for transportation.
 - h) Except as otherwise provided in §§6.10 and 8.5g), hazardous waste facility operators are required to report to the Department any irregularities between the wastes actually received and the waste described on the manifest, or any other irregularities, within five days.
 - i) Additional generator responsibilities for rail shipments are contained in §§7.4d)4) and 7.4d)5).
- 6.8 The operator of a hazardous waste facility accepting out-of-state wastes is responsible for all the requirements of this section, including requiring the generator to initiate a manifest.
- 6.9 When hazardous wastes are not properly manifested and shipped but are to be accepted by the operator of a hazardous waste facility, the requirements of §6.5 should be followed.
- 6.10 If any hazardous waste is rejected by the operator of a hazardous waste facility, the operator of that facility is to notify the Department immediately and give reasons why the waste was rejected.
- 6.11 The operator of any treatment, storage, and disposal facility will assume all the responsibilities of a generator established by these regulations for any hazardous waste transported from his facility to another permitted facility, except for waste rejected under §6.10.

6.12 Special manifest provisions

- Deleted*
- a) Purpose -- The purpose is to allow for simplified shipping, even by common carrier, of small quantities of waste covered by the LHWR but which could be eligible for a small quantity exemption. Except as specifically otherwise provided herein, compliance with all provisions of the LHWR is required.
 - b) Scope -- These provisions will apply to material in containers meeting the provisions of lab packs except that the outer container, excluding overpacking, shall not exceed five gallons (twenty liters) in total

liquid capacity prior to addition of the absorbent. The container and overpacking shall comply with applicable LDPS requirements. Except as otherwise provided herein, the requirements of §14.10 shall be met.

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- c) Manifest -- All general requirements for manifesting shall be met except that the transporter manifest requirements may be omitted provided that the generator shall advise the disposer prior to shipment and the disposer shall advise the generator upon receipt of the waste. The disposer shall advise the generator if a shipment is not received, and the generator shall then comply with the provisions of §6.4.
 - d) Reporting and recordkeeping -- Both the generator and disposer shall maintain copies of the manifests and other records as required elsewhere in the LHWR. The disposer shall include all such wastes in the annual report as provided in §6.7f).

CHAPTER 7

GENERATORS

7.1 Applicability

- a) A generator who treats, stores, or disposes of hazardous waste onsite is not required to comply with the requirements of this Chapter except for the following with respect to that waste: §§7.2, 7.3, 7.5e), 7.6a)3), 7.6a)4), 7.8, 7.9, 7.10, and 7.11.
- b) Any person who imports hazardous waste into Louisiana must comply with the standards applicable to generators established in this Chapter and especially §7.7.
- c) A farmer who generates waste pesticides which are hazardous waste and who complies with all of the requirements of §1.3d)5) is not required to comply with other standards in this Chapter or the LHWR with respect to such pesticides.
- d) A person who generates a hazardous waste as defined in Chapter 2 and further specified in Chapter 24 is subject to the requirements of this Chapter and penalties prescribed in the Act for non-compliance.
- e) 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 the LHWR. The provisions of §7.5e) are applicable to the on-site accumulation of hazardous waste by generators. Therefore, the provisions of §7.5e) only apply to owners or operators who are shipping hazardous waste which they generated at that facility. A generator who treats, stores, or disposes of hazardous waste onsite must comply with the applicable standards and permit requirements set forth in the LHWR.

7.2 Hazardous waste determination -- A person who generates a solid waste, as defined in Chapter 2, must determine if that waste is a hazard.

- a) First, the generator must determine if the waste is exempted from regulation under §1.3d).
- b) If the waste is not listed as a hazardous waste in §24.1, the generator must determine whether the waste is identified in §24.2 by either:
 - 1) Testing the waste according to the methods set forth in the "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (SW846), or according to an equivalent method approved by the Administrative Authority; or

- 2) Applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used.

7.3 EPA identification numbers -- A generator must not treat, store, dispose of, transport, or offer for transportation, hazardous waste without having received an EPA identification number.

- a) A generator who has not received an EPA identification number may obtain one by applying to EPA using the form provided.
- b) A generator must notify the Administrative Authority within seven days if any of the information submitted in the application for the identification number changes.
- c) A generator must not offer his hazardous waste to transporters or to treatment, storage, or disposal facilities that have not received an EPA identification number.

7.4 The manifest system

a) General requirements

- 1) A generator who transports, or offers for transportation, hazardous waste for off-site treatment, storage, or disposal must prepare a manifest before transporting the waste offsite, with the exclusions of generators exempt pursuant to provisions of §1.3d).
- 2) A generator must designate on the manifest one facility which is permitted to handle the waste described on the manifest.
- 3) If the transporter is unable to deliver the hazardous waste to the designated facility, the generator must either designate another facility or instruct the transporter to return the waste.
- 4) A single manifest may be used for multiple loads of hazardous waste, provided that:

All loads of hazardous waste are shipped on the same day from the same location by the same transporter to the same permitted facility;

All loads are accompanied by a copy of the manifest and an emergency information card as required by §7.4a)6);

The hazardous waste in all loads has the same shipping description and hazard class;

The total quantity of each load is specified and is initialed by the generator and transporter; and

The operator of the transport vehicle for each load is listed on the manifest.

- 5) Generators must provide a Chem-Card or similar emergency card, or a ~~statement concerning the hazardous nature of the material~~ and general guidelines for an emergency situation involving this hazardous waste to accompany the manifest on shipments and loads.
- 6) In naming a hazardous waste, a generator shall:
 - Use the Department of Public Safety proper shipping name; or
 - If the proper shipping name is "NOT OTHERWISE SPECIFIED" (NOS), then the classification system of §1.3b) shall be used after the DPS proper shipping name, "NOS."
- 7) If the hazardous waste is to be transported out of State, the generator will be responsible for receiving the completed, signed manifest from the out-of-state hazardous waste facility.
- 8) Generators must get written confirmation of acceptability of the hazardous waste from the operator of the hazardous waste facility before shipping the hazardous waste. The confirmation must be maintained as part of the facility manifest records (See §7.6).
- 9) Except as otherwise provided in §§6.10 and 8.5f), generators are required to report to the Department any irregularities between the wastes actually received and the waste described on the manifest, or any other irregularities, within fifteen days.

b) Required information

- 1) The manifest must contain all of the following information:

A manifest document number;

The generator's name, mailing address, telephone number, and EPA identification number;

The name and EPA identification number of each transporter;

The name, address, and EPA identification number of the designated facility;

The description of the waste(s) (e.g., proper shipping name, EPA hazardous waste number, etc.) required by regulations of the Louisiana Department of Public Safety Hazardous Material/Hazardous Waste Regulations in §§172.101, 172.202, and 172.203; and

The total quantity of each hazardous waste by units of weight in tons and the type and number of containers as loaded into or onto the transport vehicle.

- 2) The following certification must appear on the manifest: "This is to certify that the above-named materials are properly classified,

described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the Louisiana Department of Public Safety, U.S. Department of Transportation, and the EPA."

- c) 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 each for their records and two copies to be returned to the generator.
- d) Use of the manifest
 - 1) The generator must:
 - Sign the manifest certification by hand;
 - Obtain the handwritten signature of the initial transporter and date of acceptance on the manifest; and
 - Retain one copy, in accordance with §7.6a).
 - 2) The generator must give the transporter the remaining copies of the manifest.
 - 3) For shipments of hazardous waste within the United States solely by water (bulk shipments only), the generator must send three copies of the manifest dated and signed in accordance with this section to the owner or operator of the designated facility or the last water (bulk shipment) transporter to handle the waste in the United States if exported by water. Copies of the manifest are not required for each transporter.
 - 4) For rail shipments of hazardous waste within the United States which originate at the site of generation, the generator must complete the transporter section of the manifest less signature, retain one copy of the completed manifest, and send at least three copies of the manifest dated and signed in accordance with this section to:
 - The next non-rail transporter, if any; or
 - The designated facility if transported solely by rail; or
 - The last rail transporter to handle the waste in the United States if exported by rail. [Note: See §§8.4e) and 8.4f) for special provisions for rail or water (bulk shipment) transporters.]
 - 5) The generator will supply the railroad company with the necessary emergency response information and the manifest serial number, which are to be included on the waybill.

7.5 Pre-transport requirements

- a) Packaging -- Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must package the waste in accordance with the applicable Department of Public Safety regulations and packaging under Parts 173, 178, and 179.
- 1) Hazardous waste, liquid, or solid not otherwise specified must meet the requirement of Subchapter C of 49 CFR, and/or the Louisiana Hazardous Material Regulations Subchapter C. Special attention must be directed towards §§172.101 and 173.1300.
 - 2) Dump type transport vehicles in addition to §7.5a)1) must have a continuous plastic lining with a minimum thickness of 6 mil, be bindered or bolted in order to prevent accidental leakage or escape of the material (Trip binders are not acceptable), must be completely covered by a tarpaulin that is secured to insure no leakage during normal transportation, and the material transported must be solidified with a medium to such consistency that insures the material will not shift, creep, crawl, or splash during emergency braking from 20 mph, or accomplish these requirements by other means acceptable to the Administrative Authority.
 - 3) Portable tank or "sludge" containers in addition to §7.5a)1) must have fill, discharge, and similar openings of the container bindered or bolted to prevent discharge during transport, be secured to the transport vehicle to insure that the container will not shift laterally or longitudinally during transportation, or accomplish these requirements by other means acceptable to the Administrative Authority.
- b) Labeling -- Before transporting or offering hazardous waste for transportation offsite, a generator must label each package in accordance with the applicable Department of Public Safety Transportation regulations on hazardous materials under Part 172.
- c) Marking -- Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must mark each container of 110 gallons or less used in such transportation with the following words and information displayed in accordance with the Department of Public Safety regulations (see Department of Public Safety regulation §172.304).

Hazardous waste: Federal and State 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 _____

- d) Placarding -- Before transporting hazardous waste or offering hazardous waste for transportation off site, a generator must placard or offer the initial transporter the appropriate placards according to Department of Public Safety regulations for hazardous materials under Part 172.

e) Accumulation time

- 1) A generator may accumulate hazardous waste onsite for ninety days or less without a permit or without having interim status provided that the waste is placed in containers and the generator complies with Chapter 12, or the waste is placed in tanks and the generator complies with Chapter 11; the date upon which each period of accumulation begins is clearly marked on each container and visible for inspection; and while being accumulated onsite, each container and tank is labeled or marked clearly with the words "Hazardous Waste;"
- 2) A generator, not subject to the exclusions in §1.3d), who accumulates hazardous waste for more than ninety days, is an operator of a storage facility and is subject to the permitting requirements of the LHWRC unless he has been granted an extension to the ninety-day period. Such an extension may be granted by the Administrative Authority if hazardous wastes must remain onsite for longer than ninety days due to unforeseen, temporary, or uncontrollable circumstances. An extension of up to thirty days may be granted at the discretion of the Administrative Authority on a case-by-case basis.

7.6 Recordkeeping and reporting

a) Recordkeeping

- 1) A generator must keep a copy of each manifest signed in accordance with §7.4d)1) for three years or until he receives a signed copy from the designated facility which received the waste. This signed copy must be retained as a record for at least three years from the date the waste was accepted by the initial transporter.
- 2) A generator, must keep a copy of each Annual Report and Exception Report for a period of at least three years from the due date of the report.
- 3) A generator must keep records of any test results, waste analyses, or other determinations made in accordance with §7.2 for at least three years from the date that the waste was last sent to an onsite or offsite treatment, storage, or disposal facility.
- 4) The periods of retention referred to in this section are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrative Authority.

b) Annual report

- 1) A generator who ships his hazardous waste offsite must prepare and submit a single copy of an annual report to the Administrative Authority by March 1 of each year. The annual report must be submitted on the form provided by the Administrative Authority and it must cover generator activities during the previous calendar year. The reports must also include the following information:

7.6(b)(1) The EPA identification number, name, and address of the generator;

The calendar year covered by the report;

The EPA identification number, name, and address of each offsite 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;

The name and EPA identification number of each transporter used during the reporting year;

A description of the waste, the EPA hazardous waste number (see Chapter 24), Louisiana Department of Public Safety hazard class, and quantity of each hazardous waste shipped offsite. This information must be listed by EPA identification number for each off site facility to which waste was shipped; and

The certification signed by the generator or his authorized representative.

- 2) Generators who also dispose, treat, or store hazardous waste onsite shall also submit annual reports to the Department, including total quantity, by type, of waste handled, and how that waste was disposed, treated, or stored. Generators must maintain a copy of each report on file with the Department.

c) Exception reporting

- 1) A generator who does not receive a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within fifteen days of the date the waste was accepted by the initial transporter must contact the transporter and/or the owner or operator of the designated facility to determine the status of the hazardous waste.
- 2) A generator must submit an Exception Report to the Administrative Authority 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 days of the date the waste was accepted by the initial transporter. The Exception Report must include:

A legible copy of the manifest for which the generator does not have confirmation of delivery; and

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.

- d) Additional reporting -- The Administrative Authority, as it deems necessary under the Act, may require generators to furnish additional reports concerning the quantities and disposition of wastes identified or listed in Chapter 24.

7.7 Special conditions

a) International shipments

- 1) Any person who exports hazardous waste to a foreign country, from a point of departure for the foreign country in Louisiana must comply with the requirements of this Chapter and with the special requirements of §7.7. Importation of hazardous waste from a foreign country into Louisiana is prohibited under Act 260.
- 2) When shipping hazardous waste outside the United States from Louisiana, the generator must:

Notify the Administrative Authority in writing four weeks before the initial shipment of hazardous waste to each country in each calendar year:

The waste must be identified by its EPA hazardous waste identification number and its Louisiana Department of Public Safety shipping description; and

The name and address of the foreign consignee must be included in this notice. [Note: The requirements to notify specified in §7.7a) will not be delegated to States authorized under 40 CFR Part 271. Therefore, all generators must notify the EPA and the Administrative Authority as required.]

Require that the foreign consignee confirm 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; and

Meet the requirements under §7.4b) for the manifest, except that in the place of the name, address, and EPA identification number of the designated facility, the name and address of the foreign consignee must be used. The generator must identify the point of departure from the United States through which the waste must travel before entering a foreign country.

- 3) A generator must file an Exception Report, if:

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 days from the date it was accepted by the initial transporter; or

Within ninety 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.

7.8 All generators shall comply with the requirements of §9.6.

- 7.9 Contingency plan -- Each generator shall prepare a contingency plan. The contingency plan must include the information as specified in §§9.7a), 9.7b), 9.7c); 9.7d)2); and 9.7f). The contingency plan shall include a section describing emergency response procedure as specified in §9.7g).
- 7.10 Personnel training -- All generators shall institute a personnel training program as specified in §9.8. The training program should cover all portions of the facility that handle hazardous wastes.
- 7.11 Spills -- Any spilled material or material trapped in sumps that is a hazardous waste or that will be disposed of as a hazardous waste must be cleaned up in a timely manner.

CHAPTER 8

TRANSPORTERS

8.1 Applicability

- a) Chapter 8 establishes standards which apply to persons transporting hazardous waste within the State of Louisiana if the transportation requires a manifest under Chapter 6.

The regulations set forth in Chapters 7 and 8 establish the responsibilities of generators and transporters in the handling, transportation, and management of hazardous waste. In these regulations, Louisiana has expressly adopted certain regulations of the Department of Public Safety (DPS). These regulations concern, among other things, labeling, marking, placarding, using proper containers, and reporting discharges. The Department has adopted these regulations in order to satisfy its statutory obligation to promulgate regulations which are necessary to protect human health and the environment in the transportation of hazardous waste. The Department adoption of these DPS regulations ensures consistency with the requirements of DPS and thus avoids the establishment of duplicative or conflicting requirements with respect to these matters.

Transporters of hazardous waste are cautioned that DPS's regulations are fully applicable to their activities and enforceable by DPS. The Department and DPS worked together to develop standards for transporters of hazardous waste in order to avoid conflicting requirements. Regardless of DPS's action, the Department retains its authority to enforce these regulations.

- b) This Chapter does not apply to:

- 1) On-site transportation of hazardous waste by generators or by owners or operators of permitted hazardous waste management facilities; and
- 2) Any person who offers for transportation or who transports household refuse or household septic tank pumping from the site where it was generated, if those materials are not transported with any other hazardous waste.

- c) A transporter of hazardous waste must also comply with Chapter 7 if he transports hazardous waste into Louisiana from abroad.

8.2 EPA identification number

- a) A transporter must not transport hazardous wastes without having received an EPA identification number.
- b) A transporter who has not received an EPA identification number may obtain one by applying to the Administrative Authority using the form provided. Upon receiving the request, the Administrative Authority will assign an EPA identification number to the transporter.
- c) A transporter must notify the Administrative Authority immediately if any of the information submitted in the application for the identification number changes.

8.3 Transfer facility requirements

- a) A transporter who stores manifested shipments of hazardous waste at a transfer facility for more than ten days is considered a storage facility and is required to obtain a permit in compliance with the conditions of these Regulations.
- b) If hazardous wastes from different generators or separate wastes from the same generator become mixed after being accepted by the transporter, the transporter shall comply with applicable Federal or State generator standards unless the transporter shows that the information on the manifests still identifies the hazardous waste.
- c) A transporter storing manifested shipments of hazardous waste in containers meeting the requirements applicable to the LDPS regulations on packaging under Parts 173, 178, and 179 at a transfer facility for a period of ten days or less is exempt from the permitting requirements with approval of the Administrative Authority.

8.4 The manifest system

- a) A transporter may not accept hazardous waste from a generator or another transporter unless it is accompanied by a manifest, signed by the generator in accordance with the provisions of §7.4. The transportation of any hazardous wastes without a manifest shall be deemed a violation of these regulations and the Act.
- b) Before transporting the hazardous waste, the transporter must sign and date the manifest acknowledging acceptance of the hazardous waste from the generator or other transporter. The transporter must return a signed copy to the generator or other transporter before leaving the generator's property or other transporters facility.
- c) The transporter must ensure that the manifest accompanies the hazardous waste, except as provided for bulk water or rail transport in §§8.4d) and 8.4f).
- d) A transporter who delivers a hazardous waste to another transporter or to the designated facility must:

- 1) Obtain the date of delivery and the handwritten signature of that ~~transporter or of the owner or operator of the designated~~ facility on the manifest;
 - 2) Retain one copy of the manifest in accordance with §8.6; and
 - 3) Give the remaining copies of the manifest to the accepting transporter or designated facility.
- e) The requirements of §§8.4c), 8.4d), and 8.4f) do not apply to water (bulk shipment) transporters if:
- 1) The hazardous waste is delivered by water (bulk shipment) to the designated facility;
 - 2) A shipping paper containing all the information required on the manifest (excluding the EPA identification number, generator certification, and signatures) accompanies the hazardous waste;
 - 3) The delivering transporter obtains the date of delivery and handwritten signature of the owner and operator of the designated facility on either the manifest or the shipping paper;
 - 4) The person delivering the hazardous waste to the initial water (bulk shipment) transporter obtains the date of delivery and signature of the water (bulk shipment) transporter on the manifest and forwards it to the designated facility; and
 - 5) A copy of the shipping paper or manifest is retained by each water (bulk shipment) transporter in accordance with §8.6b).
- f) For shipments involving rail transportation, the requirements of §§8.4c), 8.4d), and 8.4e) do not apply and the following requirements do apply:
- 1) When accepting hazardous waste from a non-rail transporter, the initial rail transporter must:

Sign and date the manifest acknowledging acceptance of the hazardous waste;

Return a signed copy of the manifest to the non-rail transporter;

Forward at least three copies of the manifest to:

The next non-rail transporter, if any;

The designated facility, if the shipment is delivered to that facility by rail; or

The last rail transporter designated to handle the waste in the United States;

Retain one copy of the manifest and rail shipping paper in accordance with §8.6;

- 2) Rail transporters must ensure that a shipping paper containing all the information required on the manifest (excluding the EPA identification numbers, generator certification, and signatures) accompanies the hazardous waste at all times. [Note: Intermediate rail transporters are not required to sign either the manifest or shipping paper.];

- 3) When delivering hazardous waste to the designated facility, a rail transporter must:

Obtain the date of delivery and handwritten signature of the owner or operator of the designated facility on the manifest or the shipping paper (if the manifest has not been received by the facility); and

Retain a copy of the manifest or signed shipping paper in accordance with §8.6;

- 4) When delivering hazardous waste to a non-rail transporter, a rail transporter must:

Obtain the date of delivery and the handwritten signature of the next non-rail transporter on the manifest; and

Retain a copy of the manifest in accordance with §8.6; and

- 5) Before accepting hazardous waste from a rail transporter, a non-rail transporter must sign and date the manifest or the shipping paper (if a manifest has not been received by the facility) and provide a copy to the rail transporter.

- g) Transporters who transport hazardous waste out of the United States must:

- 1) Indicate on the manifest the date the hazardous waste left the United States;

- 2) Sign the manifest and retain one copy in accordance with §8.6d); and

- 3) Return a signed copy of the manifest to the generator.

- h) Transporters who pick up hazardous waste from generators exempted by §1.3d) are responsible for the generator manifest requirements. Transporters may use a single manifest for shipments containing waste from several generators if all the generators are listed, all the wastes are accurately described, the wastes transported in the same shipment are compatible, and are labeled as required in this Chapter, §§7.4a)6) and 7.5.

8.5 Compliance with the manifest

- a) The transporter must deliver the entire quantity of hazardous waste which he has accepted from a generator or a transporter to:
- 1) The designated facility listed on the manifest;
 - 2) The alternate designated facility, if the hazardous waste cannot be delivered to the designated facility because an emergency prevents delivery, and such action is approved by the Administrative Authority;
 - 3) The next designated transporter; or
 - 4) The place outside the United States designated by the generator.
[Note: No person may deliver a hazardous waste to a place other than the permitted facility shown on the manifest.]
- b) If the hazardous waste cannot be delivered in accordance with §8.5a), the transporter must contact the generator for further directions and must revise the manifest according to the generator's instructions.
- c) A transporter shall not transport a shipment of hazardous waste in containers unless each hazardous waste container is marked and labeled as required in §7.5b) and 7.5c). If the label is lost or detached, the transporter shall replace it based on the information taken from the manifest for the shipment.
- d) A transporter shall not transport a container that is leaking or appears to be damaged, except to the nearest place where the transport vehicle can be safely positioned without unnecessarily endangering other transport vehicles or the environment. The transporter will then make the repairs necessary to remedy the unsafe condition.
- e) A transporter shall not accept hazardous wastes consisting of a material or mixtures of materials prohibited under DPS regulations.
- f) Transporters will pick up and ship only those wastes which are properly prepared for shipment (see §7.5), and which are accompanied by a properly filled out manifest, and appear to be the hazardous waste described on the manifest. If the transporter notices any irregularities or rejects a shipment for any reason, he must notify the Department as soon as possible, but no later than the next working day.
- g) Except as provided in §§6.10 and 8.5f), transporters are required to report to the Department any irregularities between the wastes received and the waste described on the manifest, or any other irregularities, within five days.

8.6 Recordkeeping

- a) A transporter of hazardous waste must keep a copy of the manifest signed by the generator, himself, and the next designated transporter or the

owner or operator of the designated facility for a period of three years from the date the hazardous waste was accepted by the initial transporter.

- b) For shipments delivered to the designated facility by water (bulk shipment), each water (bulk shipment) transporter must retain a copy of the shipping paper containing all the information required in §8.4e)2) for a period of three years from the date the hazardous waste was accepted by the initial transporter.
- c) For shipments of hazardous waste by rail:
 - 1) The initial rail transporter must keep a copy of the manifest and shipping paper with all the information required in §8.4f)2) for a period of three years from the date the hazardous waste was accepted by the initial transporter; and
 - 2) The final rail transporter must keep a copy of the signed manifest (or the shipping paper if signed by the designated facility in lieu of the manifest) for a period of three years from the date the hazardous waste was accepted by the initial transporter. [Note: Intermediate rail transporters are not required to keep records pursuant to these regulations.]
- d) A transporter who transports hazardous waste out of the United States must keep a copy of the manifest, indicating that the hazardous waste left the United States, for a period of three years from the date the hazardous waste was accepted by the initial transporter.
- e) The periods of retention referred to in this section are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrative Authority.
- f) The transporter shall submit an annual report in compliance with the requirements of §6.7f).

8.7 Financial responsibility

- a) Each transporter of hazardous wastes shall acquire continuous coverage for all of its transport vehicles regulated by these rules and regulations at a minimum coverage of \$300,000.00 per vehicle public liability and \$200,000.00 per vehicle damage.
- b) The financial responsibility required by this section may be established by any one or a combination of the following:
 - 1) Evidence of liability insurance;
 - 2) Self-insurance with a level not more than twenty percent of equity; or
 - 3) Other evidence of financial responsibility acceptable to the Secretary of Public Safety.

8.8 Spills

- a) Contingency plan -- Each transporter shall prepare a spills contingency plan. The spill contingency plan must include the information specified in §§9.7b) [except 9.7b)1], 9.7c), 9.7e), and 9.7f). The contingency plan shall include a section describing emergency response procedures as specified in §9.7g).
- b) Personnel training -- All transporters shall institute a personnel training program as specified in §9.8. This program shall apply to all personnel who would reasonably be expected to handle hazardous waste containers or tanks or deal with spills (e.g., drivers and dispatchers).
- c) In the event of a discharge of hazardous waste during transportation, the transporter must take appropriate immediate action to protect human health and the environment (e.g., notify local authorities, and dike the discharge area).
- d) If a discharge of hazardous waste occurs during transportation and an official acting within the scope of his official responsibilities determines that immediate removal of the waste is necessary to protect human health or the environment, that official may authorize the removal of the waste by transporters who do not have EPA identification numbers.
- e) An air, rail, highway, or water transporter who has discharged hazardous waste must comply with the requirements of the "Notification Regulations and Procedures for Unauthorized Discharges and Spills."

- 8.9 Discharge cleanup -- A transporter must clean up any hazardous waste discharge that occurs during transportation and take such action as may be required by the Administrative Authority so that the hazardous waste discharge no longer presents a hazard to human health or the environment. The transporter becomes the generator of the waste for the purpose of cleanup, unless such responsibility is transferred to the owner of the material, or other responsible parties.

8.10 Use and reuse of containers

- a) A container may be used for the shipment of hazardous waste only to the extent permitted under the regulations of the Department of Public Safety. A permitted container may be reused only as provided in §8.10b).
- b) A package marked "NRC" or "STC" according to the specification requirements in the regulations of the Department of Public Safety may be reused only one time for the shipment of hazardous wastes, under the following conditions:
 - 1) The material is packaged, marked, and labeled in accordance with the regulations of the Department of Public Safety;
 - 2) Transportation is by highway only;

- 3) The package is transported only after being sealed for at least twenty-four hours is inspected for leakage immediately before being transported; or
 - 4) The package is loaded by the shipper and unloaded by the consignee, unless the motor carrier is a private or contract carrier.
 - c) Any container, including tank trucks, used to transport waste shall be cleaned before leaving the disposal site. Such cleaning should be by a method or methods necessary to remove the hazardous constituents to a level which will not cause an incompatibility with any subsequent shipment and/or render any future load hazardous. All material resulting from such cleaning shall be considered a hazardous waste unless otherwise approved by the Administrative Authority.
- 8.11 Hazardous waste that is also a hazardous material -- If a hazardous waste, as defined in these rules and regulations, also meets the definition of hazardous material, the regulations of the Department of Public Safety also apply.
- 8.12 Vehicle markings and placards
- a) Markings -- No person may transport a hazardous waste unless the transport vehicle is marked to display:
 - 1) The name or trademark of the carrier operating the vehicle;
 - 2) The city or place in which the carrier has its principal office or in which the vehicle is customarily based; and
 - 3) The name of the person operating the vehicle. The name of a person other than the operating carrier may appear on the vehicle as long as the words "operated by" immediately precedes the information required by §§8.12a)1) and 8.12a)2). (Other identifying information may be displayed on the vehicle if it is not inconsistent with the information required by this paragraph.)
 - b) The marking required by §8.12a) must:
 - 1) Appear on both sides of the vehicle;
 - 2) Be in letters that contrast sharply in color with the background;
 - 3) Be readily legible during daylight hours from a distance of at least fifty feet while the vehicle is stationary; and
 - 4) Be maintained in a manner that retains the legibility required by §8.12b) (The marking may be a removable device.)
 - c) Placarding -- A transporter may not move a transport vehicle containing a hazardous waste which is also a hazardous material unless the vehicle is placarded with placards in accordance with the regulations of the Department of Public Safety or such other regulations as may be prescribed by

the Secretary of Public Safety for placarding vehicles carrying a hazardous material.

CHAPTER 9

TREATMENT, STORAGE, AND DISPOSAL FACILITIES

9.1 Applicability

- a) All facilities which treat, store, and dispose of hazardous wastes must be constructed and operated to comply with the standards outlined in these regulations.
- b) Except as specifically authorized by the terms and conditions of a permit issued under these rules and regulations, the construction and operation of a facility to treat, store, or dispose of hazardous wastes in violation of the standards established by this section shall be a violation of the Act enforceable pursuant to §1.4 of these regulations and L.R.S. 30:1073.
- c) The requirements of this Chapter do not apply to:
 - 1) The owner or operator of a facility permitted, licensed, or registered to manage municipal or industrial solid waste, if the only hazardous waste the facility treats, stores, or disposes of is excluded from regulation by the LHWR;
 - 2) The owner or operator of a facility which treats or stores material which would otherwise be a hazardous waste which is being beneficially used or reused or legitimately recycled or reclaimed as defined in Chapter 22 of the LHWR;
 - 3) A wastewater treatment unit (see Chapter 2);
 - 4) A farmer disposing of waste pesticides from his own use as provided in §1.3d)5);
 - 5) The owner or operator of a totally enclosed treatment facility (see Chapter 2);
 - 6) The owner or operator of an elementary neutralization unit (see Chapter 2);
 - 7) Persons who respond immediately to contain or treat a spill of hazardous waste or material which, when spilled, becomes a hazardous waste, except that, the appropriate requirements of §§9.6 and 9.7 are applicable to owners and operators of treatment, storage, and disposal facilities. This paragraph only applies to activities taken in immediate response to a spill. After the immediate response activities are completed, the applicable regulations of this Chapter apply

fully to the management of any spill residue or debris which is a hazardous waste;

- 8) A transporter storing manifested shipments of hazardous waste in containers meeting the requirements applicable to the regulations of the Department of Public Safety on packaging, at a transfer facility for a period of ten days or less, if so approved by the Administrative Authority; or
- 9) The addition of absorbent material to waste in a container (see Chapter 2), or the addition of waste to absorbent material in a container, provided that these actions occur at the time waste is first placed in the container and §§9.9b), 12.2, and 12.3 are complied with.

9.2 Site requirements

a) Geology

- 1) Topographic relief -- The site should not have any abrupt topographic changes or means should be provided to guard against slides, slumping, or erosion.
- 2) Soils -- The area should be covered with natural stable soils of low permeability or a means should be provided, acceptable to Administrative Authority, which provide a barrier to penetration of surface spills or accumulations of hazardous wastes into a subsurface strata which would have a potential effect on a fresh-water aquifer.
- 3) Seismic conditions -- Portions of new facilities where treatment, storage, or disposal of hazardous waste will be conducted must not be located within 61 meters (200 feet) of a fault which has had displacement in Holocene time.

b) Hydrology

- 1) General requirement -- Sites utilized shall be isolated by means of natural or created boundaries from adjoining land and from subsurface and surface waters.
- 2) Drainage -- The site must have the capability to control and/on contain run-off from the maximum rainfall in twenty-four hours from a twenty-five year storm (when maximum rainfall records are not available, the design standard shall be twelve inches below thirty-one degrees North latitude and nine inches above thirty-one degrees North latitude) and must have the capability to divert run-on from adjoining land (outside limits of hazardous waste site or if part of an industrial complex, outside limits of company property) from such a storm from the site (surface and subsurface).

- 3) Floodplains -- A 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 Administrative Authority that:

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

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

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

The concentrations of hazardous constituents that would potentially affect surface waters as a result of washout;

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

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

- 4) Hurricane-prone-areas -- Sites located in an area which is historically subject to hurricanes shall be protected from the entry of water by natural or created barriers certified by a professional engineer.
- 5) Conformity with existing restrictions and permits -- Sites located in floodways or wetlands under control of the U. S. Army Corps of Engineers and/or the Coastal Zone Management Office must apply for applicable permits. However, to avoid unnecessarily long licensing periods, the Department may accept and process the application with its final approval dependent upon a similar approval. Final Department action on such a state permit will be taken after final action on wet lands and Coastal Zone permits.
- 6) Areas of critical environmental concern -- Sites located in, or adjacent to, swamps, marshes, floodplains, estuaries, designated wildlife hatchery areas, habitats of endangered species, and similar critical environmental areas shall be isolated from such areas by effective barriers which eliminate possible adverse impacts on such areas due to operation of the facility.

c) Facilities

- 1) Transportation -- Access to sites by surface and water transportation modes shall be by roads and waterways with the capacity to accept the

demands created by the facility and designed to avoid, to the extent practical, congestion, sharp turns, obstructions, or other hazards which are conducive to accidents.

- 2) Services -- Sites shall have convenient access to required services, including: utilities, medical care, police, fire protection, and similar services, or provide these services internally in a manner acceptable to the Administrative Authority.

- 3) Buffer zone

General requirement -- Sites shall be shielded from adjoining non-compatible land uses by space, natural separation, or other means acceptable to the Administrative Authority.

Minimum requirements -- In no event shall the buffer be less than that stated for the following sites:

Sites zoned industrially -- Sufficient space for security and drainage control facilities; or

All other locations -- 200 feet between any facility (treatment pond, incinerator, tank, etc.) and property line unless a proper buffer is installed which is acceptable to the Administrative Authority (see §12.7 for container requirements).

9.3 Discharges from the site

- a) General requirements -- All point-source discharges must be controlled and reported as follows:
 - 1) Water discharges, if any, must be in conformity with effluent limitations established by the Clean Water Act operating under an NPDES permit and reported as required by that permit. The NPDES Permit must be applied for prior to the issuance of a hazardous waste permit; or
 - 2) Air emissions, if any, must be in conformity with air limitations of the Clean Air Act administered by the Air Quality Division of the Department, operating under an Air Quality Permit as required, and reported as required by that permit. The Air Permit must be applied for prior to the issuance of a hazardous waste permit.
- b) Surface -- Offsite shipments of any hazardous waste material, containers, packaging, or similar material must be reported on a manifest and must be delivered to a permitted facility.
- c) Spills
 - 1) Any spill of hazardous waste which could possibly endanger health or adversely affect the environment offsite shall be reported to the Department immediately as provided in the "Notification Regulations and Procedures for Unauthorized Discharges and Spills."

- 2) If a spill occurs on the site of a generator or TSD facility, and if ~~that spill could endanger the public health or affect the environment~~ offsite, the Department and the Department of Public Safety have the authority to enter the site and investigate the spill. It is the responsibility of the operator to report spills of this nature to the Department and the Department of Public Safety as soon as possible, as provided in §9.3c)1).
- 3) Any spilled material or material trapped in sumps that is a hazardous waste or that will be disposed of as a hazardous waste must be cleaned up in a timely manner.

9.4 Security

- a) General requirements -- The security system shall insure that site ingress and egress by the public is controlled and that employees are protected from hazards to health resulting from contact with extremely hazardous operations.
- b) Perimeter control -- The natural or created barrier to site ingress or egress around the entire perimeter of the hazardous waste area shall be continuously patrolled or monitored. Equipment will be installed, as necessary, to keep birds and wildlife off the site.
- c) Entry -- Each entry through the perimeter barrier shall be manned at all hours. The entry should be opened by security personnel or by an electronic system (card, code, handprint, etc. or television monitor) acceptable to the Administrative Authority.
- d) Alternate means of meeting security requirements -- Any operator may petition the Administrative Authority for acceptance of equivalent alternative means of meeting the requirements of §9.4 in whole or in part. This shall be done through submission of proof that necessary procedures for the protection of health and property are provided by other means and that representatives of local fire and police departments, if any, are adequately informed of such means.
- e) Perimeter barrier -- A constructed barrier shall enclose the entire hazardous waste site and shall have the capability to deny unauthorized or unknowing ingress or egress and to prevent entry by domestic livestock.
- f) Perimeter clear zone -- A clear, lighted path shall be constructed and maintained inside the perimeter barrier to permit patrol by vehicle or foot.
- g) Required entry facilities include the following:
 - 1) Gate at each entry point equipped with secure locking device;
 - 2) Gate house for guard, or electromechanical equipment permitting controlled access; and

- 3) Floodlighting at each entry to insure a well-lighted, safe, and secure area at night.

h) Emergency response facilities

- 1) Communications -- An alarm system with controls accessible to each area of potential spill, explosion, or fire; telephone contact to each facility location; two-way radios for key personnel; and
- 2) Fire control -- Portable fire extinguishers, decontamination facilities, fire control equipment at incinerators, mixing and treatment vats; and other fire-hazard facilities and fire hydrants (with capacity as required by State Fire Code) located not more than 200 feet from each fire-hazard facility.

i) Safety control devices

- 1) Moving equipment barriers -- Steel or concrete posts or barriers capable of stopping trucks or other equipment used on the site (at maximum expected speed) shall be installed to protect all hazardous waste above-ground pipelines, valves, or other containers located adjacent to roadways.
- 2) Personnel barriers -- Barriers shall be installed at all locations where employees or visitors normally come in contact with ponds, lagoons, incinerators, treatment facilities, and other high-hazard locations.

j) Exterior lighting

- 1) All personnel barriers shall be lighted; all vehicle barriers shall have reflectors.
- 2) Entry gates shall be lighted [see §9.4h)3)].
- 3) Perimeter barriers shall be lighted [see §9.4b)].

- k) Signs -- 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 but in no case shall the spacing be greater than 200 foot intervals. 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 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 action portion can be dangerous.

9.5 General inspection requirements

- a) The owner or operator must inspect his facility for malfunctions and ~~deterioration, operator errors, and discharges which may be~~ causing or may lead to:
- 1) A release of hazardous waste -- A release of hazardous waste constituents to the environment; or
 - 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.
- b) Schedule -- §4.9g) requires the inspection schedule to be submitted with Part II of the permit application. The Administrative Authority will evaluate the schedule along with the rest of the application to ensure that it adequately protects human health and the environment.
- 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.
 - 2) He must keep this schedule at the facility.
 - 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.).
 - 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 the Chapters covering applicable site facilities and the inspection schedules must detail procedures that will adequately protect human health and the environment.
- c) The owner or operator must remedy any deterioration or malfunction of equipment or structures which the inspection reveals; a schedule must be set up to ensure that the problem does not lead to an environmental or human health hazard. When a hazard is imminent or has already occurred, remedial action must be taken immediately.
- d) The owner or operator must record inspections in an inspection log or summary. He must keep these records for at least three years from the date of inspection. At a minimum, these records must include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

9.6 Preparedness and prevention

- a) Applicability -- The regulations in this section apply to owners and operators of all hazardous waste facilities.
- b) Design and operation of a facility -- Facilities must be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.
- c) Required equipment -- All facilities must be equipped with the following, unless it can be demonstrated to the Administrative Authority that none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below:
 - 1) An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel;
 - 2) A device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, or State or local emergency response teams;
 - 3) Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment; and
 - 4) Water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems.
- d) Testing and maintenance of equipment -- All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, must be tested and maintained as necessary to assure its proper operation in time of emergency.
- e) Access to communications or alarm system
 - 1) Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless it can be demonstrated to the Administrative Authority that such a device is not required.
 - 2) Anytime there is at least one employee on the premises while the facility is operating, he must have immediate access to a device such as a telephone, immediately available at the scene of operation, or a hand-held two-way radio, capable of summoning external emergency

assistance, unless it can be demonstrated to the Administrative Authority that such a device is not required.

- f) Required aisle space -- The owner or operator must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless it can be demonstrated to the Administrative Authority that aisle space is not needed for any of these purposes.

- g) Arrangements with local authorities

- 1) The owner or operator must attempt to make the following arrangements, as appropriate for the type of waste handled at his facility and the potential need for the services of these organizations:

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;

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;

Agreements with State emergency response teams, emergency response contractors, and equipment suppliers; and

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

- 2) Where State or local authorities decline to enter into such arrangements, the owner or operator must document the refusal in the operating record.

9.7 Contingency plan and emergency procedures

- a) Purpose and implementation of contingency plan

- 1) Each owner or operator must have a contingency plan for his facility. The contingency plan must be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.
 - 2) A contingency plan to be implemented in the event of an emergency shall be filed with the Administrative Authority and, after approval,

with the local fire and police departments (if any operate in the area), hospitals and emergency response teams operating in the area or subject to call by the operator or the Department.

- 3) The provisions of the plan must be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.
- 4) The plan shall be revised each time the facility operations are changed due to expansion, change in type or quantity of waste handled, or other changes which affect the degree or type of possible emergency situation.

b) Content of contingency plan

- 1) The contingency plan must describe the actions facility personnel must take to comply with §§9.7b) and 9.7g) in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.
- 2) If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan, or some other emergency or contingency plan, he need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with these requirements.
- 3) The plan must describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and State and local emergency response teams to coordinate emergency services.
- 4) The plan must list names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator, and this list must be kept up to date. When more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates. For new facilities, this information must be supplied to the Administrative Authority at the time of certification, rather than at the time of permit application.
- 5) The plan must include a list of all emergency equipment (where required) at the facility, such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list and a brief outline of its capabilities.
- 6) The plan must include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. The plan must describe signals to be used to begin evacuation, evacuation routes, and alternate evacuation routes.

c) Copies of contingency plan

- 1) The contingency plan must be submitted to the Administrative Authority with the permit application and, after modification or approval, will become a condition of any permit issued.
- 2) A copy of the contingency plan and all revisions to the plan must be maintained at the facility and additional copies must be 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.

d) Amendment of contingency plan

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

The facility permit is revised;

The plan fails in an emergency;

Applicable regulations are revised;

The facility changes 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;

The list of emergency coordinators changes; or

The list of emergency equipment changes.

- 2) 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.

- e) Emergency coordinator -- At all times, there must be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures [see §9.7g)]. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan.

f) Emergency procedures

- 1) Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his designee when the emergency coordinator is on call) must immediately:

Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and

Notify appropriate State or local agencies with designated response roles if their help is needed.

- 2) Whenever there is a release, fire, or explosion, the emergency coordinator must immediately identify the character, exact source, amount, and areal extent of any released materials. He may do this by observation or review of facility records or manifest, and, if necessary, by chemical analysis.
- 3) Concurrently, the emergency coordinator must assess possible hazards to human health or the environment that may result from the release, fire or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fire and heat-induced explosions).
- 4) If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health or the environment outside the facility, he must report his findings as follows:

If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. He must be available to help appropriate officials decide whether local areas should be evacuated; and

He must immediately notify the State official designated as the on-scene coordinator for that geographical area and provide:

Name and telephone number of reporter;

Name and address of facility;

Time and type of incident (e.g., release, fire);

Name and quantity of material(s) involved, to the extent known;

The extent of injuries, if any; and

The possible hazards to human health or the environment, outside the facility.

- 5) During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

- 6) If the facility stops operation in response to a fire, explosion, or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.
- 7) Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil, or surface water, or any other material that results from a release, fire, or explosion at the facility. Unless the owner or operator can demonstrate that the recovered material is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements.
- 8) The emergency coordinator must ensure that in the affected area(s) of the facility:
 - No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed; and
 - All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.
- 9) The owner or operator must notify the Administrative Authority and appropriate State and local authorities that the facility is in compliance with §9.7g)8) before operations are resumed in the affected area(s) of the facility.
- 10) The owner or operator must note in the operating record the time, date, and details of any incident that requires implementation of the contingency plan. Within fifteen days after the incident, he must submit a written report on the incident to the Administrative Authority which includes:

Name, address, and telephone number of the owner or operator;

Name, address, and telephone number of the facility;

Date, time, and type of incident (e.g., fire, explosion);

Name and quantity of material(s) involved;

The extent of injuries, if any;

An assessment of actual or potential hazards to human health or the environment, where this is applicable; and

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

9.8 Personnel training

a) Instruction program

- 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. The owner or operator must ensure that this program includes all the elements described in the document required in §9.8d)3).
- 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.
- 3) At a minimum, the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including, where applicable:

Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;

Key parameters for automatic waste feed cut-off systems;

Communications or alarm systems;

Response to fires or explosions;

Response to groundwater contamination incidents; and

Shutdown of operations.

- 4) The facility operator shall conduct training sessions to be held at regular intervals for personnel in routine plant operation and also to inform and train the plant contingency team, representatives of local fire and police departments, and emergency response teams of plant layout, location of possible hazards, emergency equipment location and operation, the evacuation plan and route, power and waste stream cut-offs, communications equipment and phone numbers of all required contacts, and other critical information and procedures.
- b) Facility personnel must successfully complete the program required in §9.8a) within six months after the effective date of these regulations or six months after the date of their employment or assignment to a facility, whichever is later. Employees hired after the effective date of these regulations must not work in unsupervised positions until they have completed the training requirements in §9.8a).
 - c) Facility personnel must take part in an annual review of the initial training required in §9.8a).

- d) The owner or operator must maintain the following documents and records at the facility:
 - 1) The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job;
 - 2) A written job description for each position listed in §9.8d)1). 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;
 - 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 in §9.8d)1); and
 - 4) Records documenting that the training or job experience required under §§9.8a), 9.8b), and 9.8c) have been given to, and completed by, facility personnel.
- e) Training records on current personnel must be kept until closure of the facility; training records on former employees must be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

9.9 General requirements for ignitable, reactive, or incompatible wastes

- 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 restrict 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.
- b) The owner or operator of a facility that treats, stores, or disposes of ignitable or reactive waste, or mixes incompatible waste or incompatible wastes and other materials, must take precautions to prevent reactions which:
 - 1) Generate extreme heat or pressure, fire or explosions, or violent reactions;
 - 2) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;
 - 3) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;

- 4) Damage the structural integrity of the device or facility; and
 - 5) Through other like means threaten human health or the environment.
- c) In landfills and burial sites, incompatible wastes shall be adequately separated to avoid mixing of the wastes during operation or after closure.
 - d) Treatment and storage facilities containing ignitable, reactive, or incompatible wastes shall be sufficiently separated or protected to prevent mixing, ignition, or reaction as a result of a spill, tank failure, or other cause. Protection shall include use of container materials compatible with the wastes contained therein.
 - e) Any container, including tank trucks, used to transport waste shall be cleaned before leaving the disposal site. Such cleaning should be by a method or methods necessary to remove the hazardous constituents to a level which will not cause an incompatibility with any subsequent shipment and/or of itself render any future load hazardous. All material resulting from such cleaning shall be considered a hazardous waste unless otherwise approved by the Administrative Authority.
 - f) When required to comply with §§9.9a) and 9.9b), 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, or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions.

9.10 General waste analysis

a) Hazardous waste chemical and physical analysis

- 1) Before an owner or operator treats, stores, or disposes of any hazardous waste, he must obtain a detailed chemical and physical analysis of a representative sample of the waste. 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 all requirements of these regulations and permit conditions.
- 2) The analysis may include developed data and existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes.
- 3) 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:

When the owner or operator is notified, or has reason to believe, that the process or operation generating the hazardous waste has changed; or

For offsite facilities, when the results of the inspection required in §9.10a)4) indicate that the hazardous waste received at the facility does not match the waste designated in the accompanying manifest or shipping paper.

- 4) The owner or operator of an offsite 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.
- b) The owner or operator must develop and follow a written waste analysis plan which describes the procedures which he will carry out to comply with §9.10a). He must keep this plan at the facility. At a minimum, the plan must specify:
 - 1) The parameters for which each hazardous waste will be analyzed and the rationale for the selection of these parameters (i.e., how analysis for these parameters will provide sufficient information on the waste's properties to comply with §9.10a);
 - 2) The test methods as specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (SW846) or equivalent approved by the Administrative Authority which will be used to test for these parameters; and
 - 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 a method approved by the Administrative Authority.
 - 4) The plan must further specify the frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date;
 - 5) The Quality Assurance and Quality Control (QA/QC) procedures used to ensure the waste sampling and analysis are satisfactory. The QA/QC procedures must be equivalent to those described in the "RCRA Quality Assurance Project Plans" (HWD-83D-1) or equivalent approved by the Administrative Authority.
 - 6) The plan must further specify for offsite facilities the waste analyses that hazardous waste generators have agreed to supply; and
 - 7) Where applicable, the methods which will be used to meet the additional waste analysis requirements for specific waste management methods as specified in other Chapters.
- c) For off-site facilities, the required waste analysis plan 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:

- 1) The procedures which will be used to determine the identity of each movement of waste managed at the facility; and
- 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. [§4.9c) requires that the waste analysis plan be submitted with Part II of the permit application.]

9.11 Chemical, physical and biological treatment facilities (wastes only) -- In addition to the requirements listed below, a permit application shall address the technical requirement in Chapters 9, 11, 12, 16, 18, 19, and 20.

- a) Below-surface basins are governed by §16.2a).
- b) Above-ground and mixing and other facilities in basins shall be certified by the designing engineer or manufacturer.
- c) Treatment techniques shall include proper chemical analysis or data collecting such as is necessary to determine compatibility with existing treatment facilities, prevention of the release of toxic gases, and provisions for bacterial control and for safety of operating personnel.
- d) Pilot or bench-scale tests or reliable operating data must be obtained for any new or altered hazardous waste prior to introduction into an existing or new treatment sequence.
- e) Storage and handling procedures insuring protection of human health and the environment must be observed for all treatment chemicals or reagents.
- f) Proper design and operation of all equipment must be maintained to insure minimum spillage, foaming, or misting.
- g) Reserve emergency storage must be maintained for critical process areas to insure against operational mishaps and inadvertent volumetric surges.
- h) Flow safeguards and cut-offs must be included in the flow system to avoid improper operation, overflow, or treatment defects.
- i) Residual sludges or by-products shall be analyzed before disposition within the treatment sequence.
- j) An air monitoring system is required under §18.3e).

9.12 Surveillance and monitoring

- a) Primary responsibility for the proper handling of hazardous wastes is assumed by the industry operating under these rules and regulations and cooperating with the Department in meeting the purposes of the Act. As part of this responsibility, the owner or operator of any treatment, storage, or disposal facility shall develop a schedule of routine facility inspections and shall keep a log or record of all inspections carried out thereunder. The owner or operator shall likewise develop and adhere to a waste analysis plan to be approved by the Department.

- b) Department surveillance and monitoring includes the following:
- 1) Analysis of manifests and manifest reports to determine that all wastes generated are disposed of in permitted sites and that the proper disposal method has been used;
 - 2) Periodic inspections required by the permit maintenance program to insure that facilities treating, storing, and disposing of hazardous wastes are operated in conformity with the terms of the permit and these rules and regulations;
 - 3) Spot inspections and sampling by the traveling laboratory and the analytical and inspection team;
 - 4) A systematic program to conduct or to require investigations and recording of the groundwater, leachate, and air monitoring systems;
 - 5) Response to citizen complaints and suggestions concerning operation of the system; and
 - 6) Such other procedures as may be deemed necessary by the Administrative Authority.
- c) Violations discovered through such surveillance and monitoring shall be the subject of enforcement actions pursuant to §1.4 of these regulations.

9.13 Emergency response

- a) Purpose -- To provide for control and clean-up of accidental spills and other emergency situations involving hazardous wastes resulting from a violation of a requirement of these regulations or the Act.
- b) Program -- The Department, working with the Department of Public Safety, will establish the following program:
- 1) Emergency Response equipment and teams located in strategic locations;
 - 2) Emergency Response Plan involving a communication system, cooperation with local police and fire departments, training program based, as a minimum, on the "emergency information card," and an operations plan for each class of emergency situation; and
 - 3) The Emergency Response Program will respond to all in-transit accidents and spills, and respond to onsite emergencies when called by the operator or in accordance with provisions of §9.7g).

9.14 Receiving and monitoring incoming waste

- a) Each site which treats, stores, or disposes of hazardous wastes generated off site shall be equipped to accomplish the following:

- 1) Provide control of all incoming waste to prevent entry of unrecorded and unanalyzed hazardous waste; and
 - 2) Measure quantity and type by taking and analyzing a representative sample of waste received to verify the information on the manifest, and to determine proper method for handling and disposal.
- b) Each facility within the site which receives hazardous wastes shall be equipped with necessary devices to record quantities, by classification or other identification, of hazardous wastes deposited into the facility system.
- c) Each site shall be equipped with a central control and recordkeeping system which tabulates information from §§9.14a)2) and 9.14b).
- d) Onsite transfer systems
- 1) All docking, mooring, loading, and unloading facilities for a hazardous waste treatment, storage, or disposal facility are considered part of the facility operation.
 - 2) Hose couplings for truck, barge, or pipeline discharge shall be located within a natural or created containment, with an elevation above surface elevation sufficient to contain a ten-minute discharge. Groundwater protection shall be provided.
 - 3) Hose couplings on a barge shall be in a containment area on the barge to prevent leakage from entering the waterway.
 - 4) Hoses from a barge to the facility shall be supported by a land-based boom so that the low point of the hose is within the barge or site containment area.
 - 5) Barge moorings shall be in a slack water area outside the navigation channel.
- 264.12(a) [Handwritten note in blue ink, with a bracket pointing to items e) and f)]
- e) Receiving foreign waste -- The ~~owner or operator~~ of a facility that has arranged to receive hazardous waste from a foreign source must notify the Administrative Authority in writing at least four weeks in advance of the date the waste is expected to arrive at the facility. Notice of subsequent shipments from the same foreign source is not required.
- f) Receiving waste from an offsite source -- The owner or operator of a facility that receives hazardous waste from an off site source (except where the owner or operator is also the generator) must inform the generator in writing that he has the appropriate permit(s) for, and will accept, the waste the generator is shipping. The owner or operator must keep a copy of this written notice as part of the operating record.
- g) Unmanifested waste reports -- Any wastes presented for disposal that are not accompanied by a properly completed manifest shall be rejected. The TSD operator shall note the name of the driver, hauler, and the vehicle

identification numbers. He shall notify the Administrative Authority by phone immediately and in writing within seven days of the refusal to accept the waste and provide the Administrative Authority with the required information.

9.15 Operating record and reporting requirements

- a) The owner or operator must keep a written operating record at his facility.
- b) Records of each hazardous waste received, treated, stored, or disposed of at the facility must be recorded in the following manner, as they become available, and maintained in the operating record until closure of the facility.
 - 1) A description by its common name and the EPA Hazardous Waste Number(s) (Chapter 24) which apply to the waste and the quantity of the waste received. 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 Chapter 24, the description also must include the process that produced it (for example, solid filter cake from production of _____, EPA Hazardous Waste Number W051).
 - 2) Each hazardous waste listed in Chapter 2, and each hazardous waste characteristic defined in §1.3b) has a four-digit EPA Hazardous Waste Number assigned to it. This number must be used for recordkeeping and reporting purposes. Where a hazardous waste contains more than one listed hazardous waste, or where more than one hazardous waste characteristic applies to the waste, the waste description must include all applicable EPA Hazardous Waste Numbers.
 - 3) Record the estimated or manifest-reported weight, or volume and density, where applicable, in one of the units of measure specified in Table 2.

TABLE 2. UNITS FOR REPORTING.

Unit of measure	Symbol ¹	Density
Pounds	P	
Short tons (2000 lb)	T	
Gallons (U.S.)	G	P/G
Cubic yards	Y	T/Y
Kilograms	K	
Tonnes (1000 kg)	M	
Liters	L	K/L
Cubic meters	C	M/C

¹Single digit symbols are used here for data processing purposes.

- 4) The method(s) by handling code(s) and date(s) of treatment, storage, or disposal.
 - 5) The location of each hazardous waste within the facility and the quantity at each location. For disposal facilities, the location and quantity of each hazardous waste must be recorded on a map or diagram of each cell or disposal area. For all facilities, this information must include cross-references to specific manifest document numbers, if the waste was accompanied by a manifest.
 - 6) Records and results of waste analyses performed;
 - 7) Summary reports and details of all incidents that require implementing the contingency plan.
 - 8) Records and results of inspections required by §9.5d).
 - 9) Monitoring, testing, or analytical data where required by the LHW.
 - 10) For offsite facilities, notices to generators that the TSD facility has the appropriate permits for and will accept the waste the generator is shipping.
 - 11) All closure cost estimates and, for disposal facilities, all post-closure cost estimates.
- c) Availability, retention, and disposition of records
- 1) All records, including plans, required under this part must be furnished upon request, and made available at all reasonable times for inspection, by any officer, employee, or representatives who are duly designated by the Administrative Authority.
 - 2) 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 Administrative Authority.
 - 3) A copy of records of waste disposal locations and quantities must be submitted to the Administrative Authority and local land authority upon closure of the facility.
- d) Annual report -- The owner or operator must prepare and submit a single copy of an annual report to the Administrative Authority by March 1 of each year. The report form must be used for this report. The annual report must cover facility activities during the previous calendar year. Information submitted on a more frequent basis may be included by reference or in synopsis form where it is not pertinent to reporting under Chapter 6 or monitoring reporting under §18.9. It must include the following information:
- 1) The EPA identification number, name, and address of the facility;

- 2) The calendar year covered by the report;
 - 3) For offsite facilities, the EPA identification number of each hazardous waste generator from which the facility received a hazardous waste during the year. For imported shipments, the report must give the name and address of the foreign generator.
 - 4) A description and the quantity of each hazardous waste the facility received during the year. For offsite facilities, this information must be listed by EPA identification number of each generator.
 - 5) The method of treatment, storage, or disposal for each hazardous waste;
 - 6) The most recent closure cost estimate, and for disposal facilities the most recent post-closure cost estimate;
 - 7) The certification signed by the owner or operator of the facility or his authorized representative; and
 - 8) Monitoring data where required.
- e) Additional reports -- In addition to submitting the annual reports and unmanifested waste reports described in §§9.15d) and 6.5 the owner or operator must also report to the Administrative Authority:
- 1) Releases, fires, and explosions as specified in §9.7g)10);
 - 2) Facility closures as specified in Chapter 19; and
 - 3) As otherwise required by Chapters 13, 14, 15, 16, and 18.

9.16 Transfer of ownership

- a) Before transferring ownership or operation of a facility during its operating life, or of a disposal facility during the post-closure care period, the owner or operator must notify the new owner or operator in writing of the requirements of the LHWR.
- b) An owner's or operator's failure to notify the new owner or operator of the requirements in no way relieves the new owner or operator of his obligation to comply with all applicable requirements.

CHAPTER 10

UNDERGROUND INJECTION CONTROL

10.1 (Chapter reserved for future regulations)

CHAPTER 11

TANKS

11.1 Applicability -- The regulations in this Chapter apply to owners and operators of facilities that use tanks to treat or store hazardous waste, except as specified in §1.3d).

11.2 Design and operating requirements

- a) Tanks must have sufficient shell strength (and closed tanks must have pressure controls such as vents) to assure that they do not collapse or rupture. The Administrative Authority will review the design of the tanks, including the foundation, structural support, seams, and pressure controls. The Administrative Authority 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 and height of 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 Administrative Authority shall rely upon appropriate industrial design standards and other available information.
- b) Wastes and other materials (e.g., treatment reagents) which are incompatible with the materials 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 one of the following:
 - 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
 - 2) Alternative means of protection (e.g., cathodic protection or corrosion inhibitors).
- c) The owner or operator must use appropriate controls and practices to prevent overfilling. These must include both of the following:
 - 1) Controls to prevent overfilling (e.g., waste feed cut-off system or by-pass system to a standby tank); and
 - 2) For uncovered tanks, maintenance of sufficient freeboard to prevent overtopping by wave or wind action or by precipitation.
- d) A spill containment area capable of containing the waste in case of a spill shall surround the tank.

- 1) The capacity of the containment area must equal the capacity of the tank plus precipitation resulting from a twenty-four hour, twenty-five year storm.
 - 2) A base must underlie the tanks which is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed.
 - 3) 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.
 - 4) Run-on into the containment system must be prevented unless the collection system has sufficient excess capacity in addition to that required in §11.2d)1) to contain any run-on which might enter the system.
 - 5) Spilled or leaked waste, and accumulated precipitation must be removed from the collection area in as timely a manner as is necessary to prevent overflow of the collection system.
 - 6) If the collected material is a hazardous waste, it must be managed as a hazardous waste in accordance with all applicable requirements.
- e) A groundwater monitoring system shall be installed to measure seepage from the containment area, unless a demonstration is made of an alternate system acceptable to the Administrative Authority.
- f) Hazardous waste storage tanks shall be covered and shall not be vented directly to the atmosphere if the tanks are used to store, or if a possibility exists that they may be used to store, volatile or malodorous waste.
- g) Hazardous waste treatment and storage tanks shall not be located underground. Use of underground tanks must meet the requirements of this Chapter and be approved by the Administrative Authority.

11.3 Inspections

- a) The owner or operator must inspect all of the following:
- 1) Overfilling control equipment (e.g, waste feed cutoff systems and bypass systems) at least once each operating day to ensure that it is in good working order;
 - 2) Data gathering 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 its design;
 - 3) For uncovered tanks, the level of waste in the tank, at least once each operating day;

- 4) The construction materials of the above-ground portions of the tank, ~~at least weekly to detect corrosion or erosion and leaking of fixtures and seams; and~~
 - 5) The area immediately surrounding the tank, at least weekly, to detect obvious signs of leakage (e.g., wet spots or dead vegetation).
- b) As part of the inspection schedule and in addition to the specific requirements of §11.3a) of this section, 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, leaks, or wall thinning, to less than the required thickness. 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.
 - c) As part of the emergency response system (§9.13), the owner or operator must specify the procedures he intends to use to respond to tank spills or leakage, including procedures and timing for expeditious removal of leaked or spilled waste and repair of the tank.
 - d) As required in §9.5c) the owner or operator must remedy any leak, crack, or wall thinning in violation of §11.2, or equipment or process malfunction in violation of §§11.2b) or 11.2c) which he discovers during inspection.

11.4 Special requirements for ignitable or reactive wastes

- a) Ignitable or reactive waste must not be placed in a tank unless:
 - 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 §9.9 or §23.11 for interim status facilities is complied with;

It does not generate heat, pressure, fires, or explosions and create structural damage and endanger the facility;

It does not generate toxic vapors or dusts; and

It does not create threats to human health or the environment; or
 - 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
 - 3) The tank is used solely for emergencies.

- b) The owner or operator of a facility which treats or stores ignitable or reactive waste in covered tanks must comply with the buffer zone requirements for tanks as specified in Tables 2-1 through 2-6 of the National Fire Protection Association's "Flammable and Combustible Liquids Code" (1977 or 1981).

11.5 Special requirements for incompatible wastes

- a) Incompatible wastes, or incompatible wastes and materials, must not be placed in the same tank unless otherwise permitted under §9.9 or §23.11 for interim status facilities. The general requirements for ignitable, reactive, or incompatible wastes are specified in §9.9 or §23.11 for interim status facilities.
- b) Hazardous waste must not be placed in an unwashed tank which previously held an incompatible waste or material unless otherwise permitted under §9.9 or §23.11 for interim status facilities. The general requirements for ignitable, reactive, or incompatible wastes are specified in §9.9 or §23.11 for interim status facilities.

- 11.6 Closure -- At closure, all hazardous waste and hazardous waste residues must be removed from tanks, discharge control equipment, and discharge confinement structures. At closure, as throughout the operating period, unless the owner or operator can demonstrate that the solid waste removed from his tank is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements.

CHAPTER 12

CONTAINERS

- 12.1 Applicability -- The regulations in this Chapter apply to owners and operators of all hazardous waste facilities that store containers of hazardous waste, except as specified in §1.3d), or if the container is empty (see Chapter 2).
- a) Containers not exempted from these regulations shall be considered hazardous and shall be disposed of or treated by an acceptable waste disposal or treatment method.
 - b) 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 Chapter 2. In that event, management of the container is exempt from the requirements of this Chapter.
 - c) Empty containers sent to a reclaimer are considered product, and thus are not subject to these rules and regulations. Residue from the reclaimer's operations must be disposed of in a permitted facility.
- 12.2 Condition of containers -- If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, the owner or operator must transfer the hazardous waste from this container to a container that is in good condition or manage the waste in some other way that complies with the requirements of this Chapter.
- 12.3 Compatibility of waste with containers -- The owner or operator must use a container made of or lined with materials which will not react with, or be incompatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.
- 12.4 Management of containers
- a) A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste.
 - 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.
- 12.5 Inspections
- a) 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. Remedial action as described in §9.7 shall be taken when necessary.

- b) All containers must be stacked in such a fashion that each container identification label can be read from the access aisle.
- c) All inspection records must be maintained according to the recordkeeping requirements of §9.15.

12.6 Containment

- a) Container storage areas must have a containment system that is designed and operated in accordance with §12.6b) except as otherwise provided by §12.6c).
- b) A containment system must be designed and operated as follows:
 - 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;
 - 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;
 - 3) The containment system must have sufficient capacity to contain ten percent 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;
 - 4) Run-on into the containment system must be prevented unless the collection system has sufficient excess capacity in addition to that required in §12.6b)3) to contain any run-on which might enter the system;
 - 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; and
 - 6) If the collected material is a hazardous waste, it must be managed as a hazardous waste in accordance with all applicable requirements.
- c) Storage areas that store containers holding only wastes that do not contain free liquids need not have a containment system defined by §12.6b) provided that:
 - 1) The storage area is sloped or is otherwise designed and operated to drain and remove liquid resulting from precipitation; or
 - 2) The containers are elevated or are otherwise protected from contact with accumulated liquid.

- 12.7 Special requirements for ignitable or reactive wastes -- Containers holding ignitable or reactive waste must be located at least fifteen meters (fifty

feet) from the facility property line. (See §9.9 for additional requirements or §23.11 for additional requirements for interim status facilities.)

12.8 Special requirements for incompatible wastes

- a) Incompatible wastes, or incompatible wastes and materials (see GMLHWR), must not be placed in the same container unless §9.9 or §23.11 for interim status facilities is complied with.
- b) Hazardous wastes must not be placed in an unwashed container that previously held an incompatible waste or material.
- c) A storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials or protected from them by means of a dike, berm, wall, other device, or approved management technique.

12.9 Closure -- At closure, all hazardous waste and hazardous waste residues must be removed from the containment system. Remaining containers, liners, bases, and soil must be decontaminated or removed. At closure, as throughout the operating period, unless the owner or operator can demonstrate that the solid waste removed from the containment system is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements.

CHAPTER 13

WASTE PILES

13.1 Applicability

- a) The regulations in this subpart apply to owners and operators of facilities that store or treat hazardous waste in piles, except as specified in §1.3d).
- b) The regulations in this subpart do not apply to owners or operators of waste piles that are closed with wastes left in place. Such waste piles are subject to regulations as specified in Chapter 14 (Landfills).
- c) The owner or operator of any waste pile that is inside or under a structure that provides protection from precipitation so that neither run-off nor leachate is generated is in compliance with Chapter 18 (Groundwater Protection) provided that:
 - 1) The waste pile is designed as specified in §13.2a) and is inspected as required by §13.4 on a quarterly basis (or less often with the approval of the Administrative Authority);
 - 2) Liquids or materials containing free liquids are not placed in the pile;
 - 3) The pile is protected from surface water run-on by the structure or in some other manner;
 - 4) The pile, where necessary, is designed and operated to control dispersal of the waste by wind or by means other than wetting; and
 - 5) The pile will not generate leachate through decomposition or other reactions.

13.2 Design and operating requirements

- a) A waste pile (except for the portion of the waste pile in operation prior to date of issuance of the Hazardous Waste permit) must have:
 - 1) A synthetic liner that is designed, constructed, and installed to prevent any migration of wastes out of the pile into the adjacent subsurface soil, or ground water or surface water at any time during the active life (including the closure period) of the waste pile. The liner may be constructed of materials that may allow waste to migrate into the liner itself (but not into the adjacent subsurface

soil or, groundwater or surface water) during the active life of the facility. The liner must be:

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;

Placed upon a foundation or base capable of providing support to the liner and resistant to pressure gradients above and below the liner in order to prevent failure of the liner due to settlement, compression, or uplift; and

Installed to cover all surrounding earth likely to be in contact with the waste or leachate; and

- 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 Administrative Authority will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed thirty centimeters (one foot). The leachate collection and removal system must be constructed of materials that are:

Chemically resistant to the waste managed in the pile and the leachate expected to be generated; and

Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and any equipment used at the pile; and

Designed and operated to function without clogging through the scheduled closure of the waste pile.

- b) The owner or operator may be exempted from the requirements of §13.2a) if the Administrative Authority finds, based on a demonstration by the owner or operator, that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents into the groundwater or surface water at any future time. In deciding whether to grant an exemption, the Administrative Authority will consider:

- 1) The nature and quantity of the wastes;
- 2) The proposed alternate design and operation;
- 3) The hydrogeologic setting of the facility, including attenuating capacity and thickness of the liners and soils present between the pile, and groundwater or surface water; and

- 4) All other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to groundwater or surface water.
 - c) 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 twenty-four hour, twenty-five year storm.
 - d) The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a twenty-four hour, twenty-five year storm.
 - e) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.
 - f) If the pile contains any particulate matter which may be subject to wind dispersal, the owner or operator must cover or otherwise manage the pile to control wind dispersal. Wetting of the waste pile for control of particulate matter is not allowed unless the waste pile is equipped with a leachate collection system equivalent to §13.2a)2).
 - g) If a waste pile is constructed using two synthetic liners that are separated by a leak detection system approved by the Administrative Authority, and monitored on a frequency and for parameters agreed to by the Administrative Authority, and if the waste pile meets all the other design requirements of §13.2, the waste pile is considered in compliance with the requirements of Chapter 18 as long as neither liner leaks.
 - h) The Administrative Authority will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.
- 13.3 Exemptions -- There are no exemptions from the groundwater protection requirements in Chapter 18 except as provided in §13.2g).

13.4 Inspection of synthetic liners

- a) The facility must provide the Department with thirty days advance notice of the initial liner installation to allow the Administrative Authority the opportunity to inspect the liner and its installation.
- b) The liner must be inspected on a regular basis by removing the waste pile. The facility must notify the Department at least thirty days prior to the inspection to allow the Administrative Authority the opportunity to inspect the liner. If deterioration, a crack, or other condition is identified that is causing or could cause a leak, the owner or operator must:
 - 1) Notify the Administrative Authority of the condition in writing within seven days after detecting the condition; and

- 2) Repair or replace the liner and foundation or base and obtain a certification from an independent qualified engineer that, to the best of his knowledge and opinion, the liner and foundation or base have been repaired and leakage will not occur; or
- 3) If a detection monitoring program pursuant to §18.9 has already been established in the permit (to be complied with only if a leak occurs), comply with that program and any other applicable requirements of Chapter 18 within the period of time specified in the permit.

13.5 Monitoring and inspection

- a) During construction or installation, synthetic liners [except in the case of existing portions of piles exempt from §13.2a)], and cover systems (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage, imperfections (e.g., holes, cracks, thin spots, or foreign materials), tight seams and joints and the absence of tears, punctures, or blisters.
- b) While a waste pile is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:
 - 1) Deterioration, malfunctions, or improper operation of run-on and run-off control systems;
 - 2) Proper functioning of wind dispersal control systems, where present; and
 - 3) The presence of leachate in and proper functioning of leachate collection and removal systems, where present. Leachate must be disposed of properly.

13.6 Special requirements for ignitable or reactive waste -- Ignitable or reactive waste must not be placed in a waste pile unless:

- a) The waste is treated, rendered, or mixed before or immediately after placement in the pile so that:
 - 1) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under the definition of ignitability or corrosivity in §24.2; and
 - 2) The general requirements for ignitable, reactive, or incompatible wastes as specified in §9.9b) are met; or
- 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.

13.7 Special requirements for incompatible wastes

- a) Incompatible wastes, or incompatible wastes and materials must not be placed in the same pile, unless §9.9b) or §23.11 for interim status facilities is complied with.

- b) A pile of hazardous waste that is incompatible with any waste or other material stored nearby, in containers, other piles, open tanks or surface impoundments must be separated from the other materials, or protected from them by means of a dike, berm, wall, or other device.
- c) Hazardous waste must not be piled on the same base where incompatible wastes or materials were previously piled, unless the base has been decontaminated sufficiently to ensure compliance with §9.9b) or §23.11 for interim status facilities.

13.8 Closure and post-closure care

- a) At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste if they are identified as such in Chapter 24.
- b) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in §13.8a), the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he must close the facility and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills as specified in §14.11.
- c) The owner or operator of a waste pile that does not comply with the liner requirements of §13.2a)1) and is not exempt under §§13.1c) and 13.2b) must:
 - 1) Include in the closure plan for the pile under §19.4 a plan for complying with §13.8a) and a contingent plan for complying with §13.8b) in case all contaminated subsoils cannot be practicably removed at closure; and
 - 2) Prepare a contingent post-closure plan under §19.9 for complying with §13.8b) in case all contaminated subsoils cannot be practicably removed at closure.
- d) The cost estimates calculated under §§20.3 and 20.5 for closure and post-closure care of a pile subject to this paragraph must include the cost of complying with the contingent closure plan and the contingent post-closure plan, but are not required to include the cost of expected closure under §13.8a).

CHAPTER 14

LANDFILLS

14.1 Applicability -- The regulations in this Chapter apply to owners and operators of facilities that dispose of hazardous waste in landfills, except as specified in §1.3d).

14.2 Design and operating requirements

a) A landfill (except for the portion of the landfill in operation prior to date of issuance of the Hazardous Waste permit) must have:

- 1) A liner that is designed, constructed, and installed to prevent any migration of wastes out of the landfill to the adjacent subsurface soil, or ground water or surface water throughout the active life (including the closure period) of the landfill. The liner, as a minimum, must consist of a synthetic liner laid on top of a permanent barrier at the bottom and along the sides of the landfill or burial site. The liner must be constructed of materials that prevent wastes from passing into the liner during the active life of the facility. The liner must be:

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 waste or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

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;

Be resistant to the action of the elements, contents placement (including equipment used to place contents), and chemical action of the contents by means protecting the integrity of the barrier; and

The permanent barrier shall be at least three feet of recompacted clay with a permeability of 1×10^{-7} cm/sec or less and so designed and operated as to prevent endangering any fresh-water aquifer by the migration of contaminants from the facility, or equivalent system acceptable to Administrative Authority; and

- 2) A leachate collection and removal system immediately above the synthetic liner that is designed, constructed, maintained and operated to collect and remove leachate from the landfill. The Administrative Authority will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed thirty centimeters (one foot). The leachate collection and removal system must be designed and operated to function without clogging through the scheduled closure of the landfill and constructed of materials that are:

Chemically resistant to the waste managed in the landfill and the leachate expected to be generated; and

Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and any equipment used at the landfill.

- b) Unless the permittee demonstrates to the Administrative Authority that the first permeable zone in which groundwater monitoring would occur is not a potable water aquifer, a leachate system shall be provided. A permanent barrier of at least three feet of recompacted clay with a permeability of 1×10^{-7} cm/sec or less shall be installed below the leachate detection system, which is located immediately under the liner system as required by §14.2a) unless an equivalent system is acceptable to the Administrative Authority.
- c) 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 a twenty-four hour, twenty-five year storm.
- d) The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a twenty-four hour, twenty-five year storm.
- e) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain the design capacity of the system. Collected material must be disposed of properly.
- f) 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. Wetting of the landfill for control of particulate matter is not allowed unless the landfill is equipped with a leachate collection system equivalent to §14.2a)2).
- g) The Administrative Authority will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.
- h) If noxious gases are generated, (or have the potential to be generated), the Administrative Authority may specifically require a gas collection and control system.

- i) Accumulated rainfall and groundwater must be removed from the active portions of landfills in a timely manner.
- j) Materials that may be landfilled.
 - 1) Materials which may be landfilled using clay encapsulation in compliance with the permit, any order of the Environmental Control Commission and the Assistant Secretary and State or Federal Regulations, if they meet the following criteria:

The material does not contain free liquid, except for laboratory packs;

The content of the metals listed in §24.2d) as amended does not exceed fifty percent;

The free cyanide content does not exceed 500 ppm;

The phenol concentration does not exceed five percent;

The PCB content does not exceed fifty (50) ppm;

Any leachate that would be produced can be handled by the facility with existing technology;

Halogenated solvents content does not exceed 5%, i.e., waste streams number F001, F002, K016, K019, K029, K030, K085, K095, K096, P028, U025, U037, U044, U048, U070, U071, U072, U076, U077, U078, U079, U080, U083, U084, U131, U184, U207, U208, U209, U210, U226, U227, and U228;

Non-halogenated solvents content does not exceed 10%, i.e., waste streams number F003, F004, F005, F009, K025, U019, U056, U159, U220, and U239;

The material is not a confined gas;

It is not an infectious waste as defined in Chapter 2;

It is not an ignitable waste as defined in §24.2a);

It is not a corrosive waste as defined by the pH limits in §24.2b);

It is not a reactive waste as defined in §24.2c); and

It is not a radioactive waste as defined by the regulations of the Nuclear Division.

- 2) Permittees may request approval for landfilling of wastes which do not meet the criteria on a case-by-case basis. Such a request must include specific data on how such waste does not meet the criteria, documentation on why high technology destruction/detoxification is

not practicable, and provide risk assessment information as to why such landfilling will not endanger public health or the environment.

- 3) Changes, up to double the specified value on the following materials; metals, free cyanide, phenol, halogenated solvents, and non-halogenated solvents listed in §14.2j)1) may be authorized by the Administrative Authority. Other changes may be submitted to the Environmental Control Commission.

14.3 Exemption -- There are no exemptions from the groundwater protection requirements in Chapter 18.

14.4 Monitoring and inspection

- a) The facility must provide the Department with thirty days advanced notice of the times of installation to allow the Administrative Authority the opportunity to inspect the liner and installation.
- b) During construction or installation, liners [except in the case of existing portions of landfills exempt from §14.2a)] and cover systems (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign materials). Immediately after construction or installation:
 - 1) Synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters; and
 - 2) Soil-based and admixed liners and covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the liner or cover.
- c) While a landfill is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

[Comment: The permit application must include a detailed inspection plan.]

- 1) Deterioration, malfunctions, or improper operation of run-on and run-off control systems;
- 2) The presence of liquids in leak detection systems;
- 3) Proper functioning of wind dispersal control systems, where present; and
- 4) The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

14.5 Surveying and recordkeeping -- The owner or operator of a landfill must maintain the following items in the operating record:

- a) On a map, the exact location and dimensions, including depth of each cell with respect to permanently surveyed benchmarks; and
- b) The contents of each cell and the approximate location of each hazardous waste type within each cell.

14.6 Special requirements for ignitable or reactive waste

- a) Except as provided in §14.6b) and in §14.10, 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:
 - 1) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste in the LHWR; and
 - 2) §9.9 is complied with.
- b) Solid ignitable wastes in containers may be landfilled without meeting the requirements of §14.6a), 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:
 - 1) 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; and
 - 2) Must be covered daily with soil or other non-combustible material to minimize the potential for ignition of the wastes; and
 - 3) 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.

14.7 Special requirements for incompatible wastes -- Incompatible wastes, or incompatible wastes and materials, must not be placed in the same landfill cell, unless §9.9 is complied with.

14.8 Special requirements for liquid waste

- a) Bulk or non-containerized liquid waste or waste containing free liquids must not be placed in a landfill unless, before disposal, the liquid waste or the waste containing free liquids is treated or stabilized, chemically or physically (e.g., by mixing with an absorbent solid), so that free liquids are no longer present.
- b) Containers holding free liquids must not be placed in a landfill unless:
 - 1) All free-standing liquids:
 - Have been removed by decanting, or other methods;
 - Have been mixed with absorbent or solidified so that free standing liquid is no longer observed; or

Have been otherwise eliminated; or

- 2) The container is very small such as an ampule; or
- 3) The container is designed to hold free liquids for use other than storage, such as a battery or capacitor; or
- 4) The container is a lab pack as defined in Chapter 2 and is disposed of in accordance with §14.10.

14.9 Special requirements for containers -- Unless they are very small, such as an ampule, containers must be either:

- a) At least ninety percent full when placed in the landfill; or
- b) Emptied and crushed flat, shredded, or similarly reduced in volume to the maximum practical extent before burial in the landfill.

14.10 Disposal of small containers of hazardous waste in overpacked drums (lab packs) -- Lab packs may be placed in a landfill if the following requirements are met:

- a) Hazardous waste must be packaged in non-leaking inside containers. The inside containers must be designed and constructed of a material that will not react dangerously with, be decomposed by, or be ignited by the contained waste. Inside containers must be tightly and securely sealed. The inside containers must be of the size and type specified in the Louisiana Department of Public Safety (LDPS) hazardous materials/hazardous waste regulations (Parts 173, 178, and 179), if those regulations specify a particular inside container for the waste;
- b) The inside containers must be overpacked in an open head LDPS specification metal shipping container (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;
- c) The absorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers in accordance with §9.9;
- d) Incompatible wastes, as defined in Chapter 2, must not be placed in the same outside container; and
- e) Reactive wastes, other than cyanide or sulfide-bearing waste, as defined in Chapter 2, must be treated or rendered non-reactive prior to packaging in accordance with §§14.10a) through 14.10d). Cyanide and sulfide bearing reactive waste may be packed in accordance with §§14.10a) through 14.10d) of this section without first being treated or rendered non-reactive.

14.11 Closure and post-closure care

- 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:
 - 1) Provide long-term minimization of migration of liquids through the closed landfill;
 - 2) Function with minimum maintenance;
 - 3) Promote drainage and minimize erosion or abrasion of the cover;
 - 4) Accommodate settling and subsidence so that the cover's integrity is maintained; and
 - 5) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.
- b) After final closure, the owner or operator must comply with all post-closure requirements contained in §§19.8 through 19.10, including maintenance and monitoring throughout the post-closure care period (specified in the permit under §19.11a)1). The owner or operator must:
 - 1) Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events;
 - 2) Maintain and monitor the leak detection system in accordance with §§14.2b) or 18.3d), where such a system is present between double liner systems;
 - 3) Continue to operate the leachate collection and removal system until leachate is no longer detected;
 - 4) Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of Chapter 18;
 - 5) Prevent run-on and run-off from eroding or otherwise damaging the final cover; and
 - 6) Protect and maintain surveyed benchmarks used in complying with Chapter 18.
- c) During the post-closure care period, if liquid leaks into a leak detection system installed under §18.3, the owner or operator must notify the Administrative Authority of the leak in writing within seven days after detecting the leak. The Administrative Authority will modify the permit to require compliance with the requirements of Chapter 18.

CHAPTER 15

LAND TREATMENT

15.1 Applicability -- The regulations in this Chapter apply to owners and operators of facilities that treat or dispose of hazardous waste in land treatment units, except as §1.3d) provides otherwise.

15.2 Design and operating requirements

- a) The owner or operator must design, construct, operate and maintain the unit to maximize the degradation, transformation, and immobilization of hazardous constituents in the treatment zone. The owner or operator must design, construct, operate, and maintain the unit in accordance with all design and operating conditions that were used in the treatment demonstration under §15.4. At a minimum, the Administrative Authority will specify the following in the facility permit:
 - 1) The rate and method of waste application to the treatment zone;
 - 2) Measures to control soil pH;
 - 3) Measures to enhance microbial or chemical reactions (e.g., fertilization, tilling); and
 - 4) Measures to control the moisture content of the treatment zone.
- b) The owner or operator must design, construct, operate, and maintain the treatment zone to minimize run-off of hazardous constituents during the active life of the land treatment unit.
- 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 twenty-four hour, twenty-five year storm.
- d) The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a twenty-four hour, twenty-five year storm.
- e) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain the design capacity of the system. Collected material must be disposed of properly.

- 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.
- g) The owner or operator must inspect the unit weekly and after storms to detect evidence of:
 - 1) Deterioration, malfunctions, or improper operation of run-on and run-off control systems; and
 - 2) Improper functioning of wind dispersal control measures.
- h) The Administrative Authority 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.

15.3 Treatment program

- a) An owner or operator subject to this Chapter 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 treatment program must include:
 - 1) The wastes that are capable of being treated at the unit based on a demonstration under §15.4;
 - 2) Design measures and operating practices necessary to maximize the success of degradation, transformation, and immobilization processes in the treatment zone in accordance with §15.2a); and
 - 3) Unsaturated zone monitoring provisions meeting the requirements of §15.6.
- b) The Administrative Authority will specify in the facility permit the hazardous constituents that must be degraded, transformed, or immobilized under this subpart. Hazardous constituents are constituents identified in Table 1 of Chapter 17 that are reasonably expected to be in or derived from waste placed in or on the treatment zone.

[Comment: The permit application must list the hazardous constituents reasonably expected to be in, or derived from, the wastes to be land treated based on waste analysis performed pursuant to §9.10.]
- c) The Administrative Authority 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:
 - 1) No more than 1.5 meters (five feet) from the initial soil surface; and

- 2) More than one meter (three feet) above the seasonal high water table.
- d) The Administrative Authority will specify in the facility permit the elements of the treatment program.

15.4 Treatment demonstration

- 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.
- 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 §15.4a), he must obtain a treatment or disposal permit as specified in Chapter 3.2d). The Administrative Authority 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 §15.4c).
- c) Any field test or laboratory analysis conducted in order to make a demonstration under §15.4a) must:

- 1) Accurately simulate the characteristics and operating conditions for the proposed land treatment unit including:

The characteristics of the waste (including the presence of constituents in Table 1 of Chapter 17);

The climate in the area;

The topography of the surrounding area;

The characteristics of the soil in the treatment zone (including depth); and

The operating practices to be used at the unit.

- 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
- 3) Be conducted in a manner that protects human health and the environment considering:

The characteristics of the waste to be tested;

The operating and monitoring measures taken during the course of the test;

The duration of the test;

The volume of waste used in the test;

In the case of field tests, the potential for migration of hazardous constituents to groundwater or surface water.

d) Permits for land treatment demonstrations using field tests or laboratory analyses.

- 1) For the purpose of allowing an owner or operator to meet the treatment demonstration requirements of §15.4, the Administrative Authority may issue a treatment demonstration permit. The permit must contain only those requirements necessary to meet the standards in §15.4c). 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.

The Administrative Authority may issue a two-phase facility permit if he finds that, based on information submitted in Part II of the application, substantial, although incomplete or inconclusive, information already exists upon which to base the issuance of a facility permit.

If the Administrative Authority 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 this Chapter, he must issue a treatment demonstration permit covering only the field test or laboratory analyses.

- 2) If the Administrative Authority 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 Administrative Authority finds may be necessary under §15.4c). The Administrative Authority will include conditions in the second phase of the facility permit to attempt to meet all requirements of this Chapter pertaining to unit design, construction, operation, and maintenance. The Administrative Authority will establish these conditions in the second phase of the permit based upon the substantial but incomplete or inconclusive information contained in the Part II application.

The first phase of the permit will be effective as provided in §5.4b).

The second phase of the permit will be effective as provided in §15.4d)4).

- 3) When the owner or operator who has been issued a two-phase permit has completed the treatment demonstration, he must submit to the Administrative Authority a certification, signed by a person authorized to sign a permit application or report under §§4.4 and 4.5, that the field tests or laboratory analyses have been carried out in accordance with the conditions specified in phase one of the permit for conducting such tests or analyses. The owner or operator must also submit all data collected during the field tests or laboratory analyses within ninety days of completion of those tests or analyses unless the Administrative Authority approves a later date.
- 4) If the Administrative Authority determines that the results of the field tests or laboratory analyses meet the requirements of §15.4, he will modify the second phase of the permit to incorporate any requirements necessary for operation of the facility in compliance with this Chapter, based upon the results of the field tests or laboratory analyses.

This permit modification may proceed as a minor modification under §3.11c), provided any such change is minor, or otherwise will proceed as a modification under §3.12b).

If no modification of the second phase of the permit are necessary, or if only minor modifications are necessary and have been made, the Administrative Authority 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 final decision on the second phase of the permit. The second phase of the permit then will become effective as specified in §5.4b).

If modifications under §3.12b) are necessary, the second phase of the permit will become effective only after those modifications have been made.

- 15.5 Food-chain crops -- No produce or food-chain crops may be allowed to grow on a landfarm. Additionally, grasses and other cover plants may not be used for grazing or hay production for domestic livestock.
- 15.6 Unsaturated zone monitoring -- An owner or operator subject to this Chapter must establish an unsaturated zone monitoring program to discharge the following responsibilities:
 - a) The owner or operator must monitor the soil and soil-pore liquid to determine whether hazardous constituents migrate out of the treatment zone.
 - 1) The Administrative Authority will specify the hazardous constituents to be monitored in the facility permit. The hazardous constituents to be monitored are those specified under §15.3b).

- 2) The Administrative Authority may require monitoring for principal hazardous constituents (PHCs) in lieu of the constituents specified under §15.3b). 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 Administrative Authority will establish PHCs if he finds, based on waste analyses, treatment demonstrations, or other data, that effective degradation, transformation, or immobilization of the PHCs will assure treatment at at least equivalent levels for the other hazardous constituents in the wastes.
- 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:

[Comment: The permit application must also address the following:

(1) Sampling equipment, procedures, and frequency; (2) Procedures for selecting sampling locations; (3) Analytical procedures; (4) Chain of custody control; (5) Procedures for establishing background values; (6) Statistical methods for interpreting results; (7) The justification for any hazardous constituents recommended for selection as principal hazardous constituents in accordance with the criteria for such selection in §15.6a); and (8) 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 §9.10.]

- 1) Represent background soil-pore liquid quality and the chemical makeup of soil that has not been affected by leakage from the treatment zone; and
 - 2) Indicate the quality of soil-pore liquid and the chemical makeup of the soil below the treatment zone.
- c) The owner or operator must establish a background value for each hazardous constituent to be monitored under §15.6a). The permit will specify the background values for each constituent or specify the procedures to be used to calculate the background values.
 - 1) Background soil values may be based on a one-time sampling at a background plot having characteristics similar to those of the treatment zone.
 - 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.
 - 3) The owner or operator must express all background values in a form necessary for the determination of statistically significant increases under §15.6f).

- 4) In taking samples for the determination of all background values, the owner or operator must use an unsaturated zone monitoring system that complies with §15.6b)1).
- d) The owner or operator must conduct soil monitoring and soil-pore liquid monitoring immediately below the treatment zone. The Administrative Authority 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 §15.6f).
- 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 makeup of the soil below the treatment zone. At a minimum, the owner or operator must implement procedures and techniques for:
 - 1) Sample collection;
 - 2) Sample preservation and shipment;
 - 3) Analytical procedures; and
 - 4) Chain of custody control.
- 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 §15.6a) below the treatment zone each time he conducts soil monitoring and soil-pore liquid monitoring under §15.6d).
 - 1) In determining whether a statistically significant increase has occurred, the owner or operator must compare the value of each constituent, as determined under §15.6d), to the background value for that constituent according to the statistical procedure specified in the facility permit under this paragraph.
 - 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 Administrative Authority will specify that time period in the facility permit after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of soil and soil-pore liquid samples.
 - 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 Administrative Authority will specify a statistical procedure in the facility permit that he finds:

Is appropriate for the distribution of the data used to establish background values; and

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.

- g) If the owner or operator determines, pursuant to §15.6f), that there is a statistically significant increase of hazardous constituents below the treatment zone, he must:
 - 1) Notify the Administrative Authority of this finding in writing within seven days. The notification must indicate what constituents have shown statistically significant increases.
 - 2) Within ninety days, submit to the Administrative Authority 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.
 - h) If the owner or operator determines, pursuant to §15.6f), that there is a statistically significant increase of hazardous constituents below the treatment zone, he may demonstrate that a source other than regulated units caused the increase or that the increase resulted from an error in sampling, analysis, or evaluation. While the owner or operator may make a demonstration under this paragraph in addition to, or in lieu of, submitting a permit modification application under §15.6g)2), he is not relieved of the requirement to submit a permit modification application within the time specified in §15.6g)2) unless the demonstration made under this paragraph successfully shows that a source other than regulated units caused the increase or that the increase resulted from an error in sampling, analysis, or evaluation. In making a demonstration under this paragraph, the owner or operator must:
 - 1) Notify the Administrative Authority in writing within seven days of determining a statistically significant increase below the treatment zone that he intends to make a determination under this paragraph;
 - 2) Within ninety days, submit a report to the Administrative Authority demonstrating that a source other than the regulated units caused the increase or that the increase resulted from error in sampling, analysis, or evaluation;
 - 3) Within ninety days, submit to the Administrative Authority an application for a permit modification to make any appropriate changes to the unsaturated zone monitoring program at the facility; and
 - 4) Continue to monitor in accordance with the unsaturated zone monitoring program established under this section.
- 15.7 Recordkeeping -- The owner or operator must include hazardous waste application dates, application rates, quantities and locations of each hazardous waste placed in the facility in the operating record required under §9.15.

15.8 Special requirements for ignitable or reactive waste -- The owner or operator must not apply ignitable or reactive waste to the treatment zone unless:

- a) The waste is immediately incorporated into the soil so that:
 - 1) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under the definition of ignitability and corrosivity in the LHW; and
 - 2) §9.9 or §23.11 for interim status facilities is complied with; or
- 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.

15.9 Special requirements for incompatible wastes -- The owner or operator must not place incompatible wastes, or incompatible wastes and materials in or on the same treatment zone, unless §9.9 or §23.11 for interim status facilities is complied with.

15.10 Closure and post-closure care

- a) During the closure period the owner or operator must:
 - 1) Continue all operations (including pH control) necessary to maximize degradation, transformation, or immobilization of hazardous constituents within the treatment zone as required under §15.2a), except to the extent such measures are inconsistent with §15.10a)8);
 - 2) Continue all operations in the treatment zone to minimize run-off of hazardous constituents as required under §15.2b);
 - 3) Maintain the run-on control system required under §15.2c);
 - 4) Maintain the run-off management system required under §15.2d);
 - 5) Control wind dispersal of particulate matter if required under §15.2f);
 - 6) Continue to comply with any prohibitions or conditions concerning growth of food-chain crops under §15.5;
 - 7) Continue unsaturated zone monitoring in compliance with §15.6, except that soil-pore liquid monitoring may be terminated ninety days after the last application of waste to the treatment zone; and
 - 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.

- b) For the purpose of complying with §19.6, when closure is completed, the owner or operator may submit to the Administrative Authority 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.
- c) During the post-closure care period the owner or operator must:
 - 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;
 - 2) Maintain a vegetative cover over closed portions of the facility;
 - 3) Maintain the run-on control system required under §15.2c).
 - 4) Maintain the run-off management system required under §15.2d);
 - 5) Control wind dispersal of particulate matter if required under §15.2f);
 - 6) Continue to comply with any prohibitions or conditions concerning growth of food-chain crops under §15.5; and
 - 7) Continue unsaturated zone monitoring in compliance with §15.6, except that soil-pore liquid monitoring may be terminated ninety days after the last application of waste to the treatment zone.
- d) The owner or operator is not subject to regulation under §§15.10a)8) and 15.10c) if the Administrative Authority 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 §15.10d)3). The owner or operator may submit such a demonstration to the Administrative Authority at any time during the closure or post-closure care periods. For the purposes of this paragraph:
 - 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 §15.3b).

Background soil values may be based on a one-time sampling of a background plot having characteristics similar to those of the treatment zone.

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 §15.10d)3).

- 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 makeup of soil that has not been affected by leakage from the treatment zone and the soil within the treatment zone, respectively.
- 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 the constituent presence in the treatment zone will be identified. The owner or operator must use a statistical procedure that:

Is appropriate for the distribution of the data used to establish background values; and

Provides a reasonable balance between the probability of falsely identifying a hazardous constituent presence in the treatment zone and the probability of failing to identify a real presence in the treatment zone.

- 4) The owner or operator is not subject to regulation under Chapter 18 if the Administrative Authority finds that the owner or operator satisfies §15.10d) and if unsaturated zone monitoring under §15.6 indicates that hazardous constituents have not migrated beyond the treatment zone during the active life of the land treatment unit.

15.11 Landfarming

- a) Landfarms shall be isolated from contact with the public, livestock, or private, irrigation, or livestock water supplies, both surface and underground. A permit application shall address the technical requirements in Chapters 9, 15, 18, 19, and 20.
- b) Requirements
 - 1) Soils shall be fine-grained with high clay or organic content (e.g., CL, OL, MH, CH, and OH under the Unified Soil Classification System);
 - 2) Soils shall maintain a high cation exchange capacity to absorb metallic elements in the waste by natural (pH range of the soil) or artificial means (additives);
 - 3) Landfarms shall be located in a hydrologic section where the historic high water table is at a safe depth below the zone of incorporation, or the water table at the site shall be controlled to a safe depth below this zone [see §15.3c)2)];
 - 4) Topography shall provide for drainage to prevent ponding;

- 5) Land slope shall be controlled to prevent erosion; and
- 6) Run-off shall be collected and contained within the landfarm area in a catchment basin and disposed by irrigation, evaporation, or treatment. Any discharge into the off-site environment shall be governed by a NPDES permit; and
- 7) Groundwater monitoring systems shall be installed that meet with the approval of the Administrative Authority.

CHAPTER 16

SURFACE IMPOUNDMENTS

- 16.1 Applicability -- The regulations in this subpart apply to owners and operators of facilities that use surface impoundments to treat, store, or dispose of hazardous waste except as §1.3d) provides otherwise.

[Comment: All surface impoundments used to store hazardous waste, including short-term storage (ninety days or less), must have a TSD permit.]

- 16.2 Design and operating requirements

[Comment: The permit application must submit detailed plans and specifications accompanied by an engineering report that must collectively include the information itemized and address the following in addition to the design and operating requirements: (1) a description of the proposed maintenance and repair procedures; (2) a description of the operating procedures that will ensure compliance with this section; and (3) a certification by a qualified engineer which states that the facilities comply with the applicable design requirements in this section. The owner or operator of a new facility must submit a statement by a qualified engineer that he will provide such a certification upon completion of construction in accordance with the plans and specifications.]

- a) A surface impoundment (except for the portion of the surface impoundment in operation prior to date of issuance of the Hazardous Waste permit) must have a liner designed, constructed, and installed to prevent any migration of wastes out of the impoundment to the adjacent subsurface soil or ground water or surface water at any time during the active life (including the closure period) of the impoundment. The liner, as a minimum, must consist of a synthetic liner laid on top of a permanent barrier at the bottom and along the sides of the surface impoundment that will cover all surrounding earth likely to be in contact with the waste or leachate. The liner may be constructed of materials that may allow wastes to migrate into the liner (but not into the adjacent subsurface soil or ground water or surface water) during the active life of the facility, provided that the impoundment is closed in accordance with §16.6a). For impoundments that will be closed in accordance with §16.6d)1), the liner must be constructed of materials that can prevent wastes from migrating into the liner during the active life of the facility. The liner must be:
 - 1) 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;

- 2) 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;
- 3) The permanent barrier shall be three feet of clay with a permeability of 1×10^{-7} cm/sec or less and so designed and operated as to prevent endangering any freshwater aquifer by the migration of contaminants from the facility, or an equivalent system acceptable to the Administrative Authority; and
- 4) The synthetic liner shall be resistant to action of elements and the planned contents of the impoundment or the basin for a period of time not less than the estimated life of the operation.

[Comment: The permit application must include a bond warranty or other demonstration satisfactory to the Administrative Authority for liners for which historical performance data is not available.]

- b) The owner or operator will be exempted from the requirements of §16.2a) if the Administrative Authority finds, based on a demonstration by the owner or operator, that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents (see §18.4) into the groundwater or surface water at any future time. In deciding whether to grant an exemption, the Administrative Authority will consider:
 - 1) The nature and quantity of the wastes;
 - 2) The proposed alternate design and operation;
 - 3) The hydrogeologic setting of the facility, including the attenuating capacity and thickness of the liners and soils present between the impoundment and groundwater or surface water; and
 - 4) All other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to groundwater or surface water.
- c) A surface impoundment must be designed, constructed, maintained, and operated to prevent overtopping resulting from normal or abnormal operations, overfilling, wind and wave action, rainfall, run-on, malfunctions of level controllers, alarms and other equipment, and human error.
- d) The surface impoundment must have dikes that are designed, constructed, and maintained with sufficient structural integrity to prevent massive failure of the dikes. In ensuring structural integrity, it must not be presumed that the liner system will function without leakage during the active life of the unit.

- e) The Administrative Authority will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.
 - f) Surface run-off within the site utilized shall be impounded on the site and treated as necessary to comply with NPDES discharge permit requirements.
 - g) Surface run-off outside the site (limits of hazardous waste facilities or, when part of an industrial complex, the limits of company property used for company operations) shall be diverted and prevented from entry into the site.
 - h) If a surface impoundment is constructed using two synthetic liners separated by a leak detection system approved by the Administrative Authority and monitored on a frequency and for parameters agreed to by the Administrative Authority, and the surface impoundment meets all the other design requirements of §16.2a), the landfill is considered in compliance with the groundwater monitoring requirements of Chapter 18.
- 16.3 Exemption -- There are no exemptions from the groundwater protection requirements in Chapter 18, except as provided in §16.2h).

16.4 Monitoring and inspection

- a) The facility must provide the Department with thirty days advance notice of the initial liner installation to allow the Administrative Authority the opportunity to inspect the liner and its installation.
- b) During construction and installation, liners [except in the case of existing portions of surface impoundments exempt from §16.2a)] and cover systems (such as membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign materials). Immediately after construction or installation:
 - 1) Synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters; and
 - 2) Soil-based and admixed liners and covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the liner or cover.
- c) While a surface impoundment is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:
 - 1) Deterioration, malfunctions, or improper operation of overtopping control systems;
 - 2) Sudden drops in the level of the impoundment's contents;
 - 3) The presence of liquids in leak detection systems; and

- 4) Severe erosion or other signs of deterioration in dikes or other containment devices.
- d) Prior to the issuance of a permit, and after any extended period of time (at least six months) during which the impoundment was not in service, the owner or operator must obtain a certification from a qualified engineer that the impoundment's dike, including that portion of any dike which provides freeboard, has structural integrity. The certification must establish, in particular, that the dike:
 - 1) Will withstand the stress of the pressure exerted by the types and amounts of wastes to be placed in the impoundment and
 - 2) Will not fail due to scouring or piping, without dependence on any liner system included in the surface impoundment construction.

16.5 Emergency repairs; contingency plans

- a) A surface impoundment must be removed from service in accordance with §16.5b) when:
 - 1) The level of liquids in the impoundment suddenly drops and the drop is not known to be caused by changes in the flows into or out of the impoundment, or
 - 2) The dike leaks.
- b) When a surface impoundment must be removed from service as required by §16.5a) of this section, the owner or operator must:
 - 1) Immediately shut off the flow or stop the addition of wastes into the impoundment;
 - 2) Immediately contain any surface leakage which has occurred or is occurring;
 - 3) Immediately stop the leak;
 - 4) Take any other necessary steps to stop or prevent catastrophic failure;
 - 5) If a leak cannot be stopped by any other means, empty the impoundment; and
 - 6) Notify the Administrative Authority of the problem by phone in twenty-four hours and in writing within seven days after detecting the problem.
- c) As part of the contingency plan required in §9.7, the owner or operator must specify a procedure for complying with the requirements of §16.5b).
- d) No surface impoundment that has been removed from service in accordance with the requirements of this section may be restored to service unless

the portion of the impoundment which was failing is repaired and the following steps are taken:

- 1) If the impoundment was removed from service as the result of actual or imminent dike failure, the dike's structural integrity must be recertified in accordance with §16.4d).
- 2) If the impoundment was removed from service as the result of a sudden drop in the liquid level, then:

For any existing portion of the impoundment, a liner must be installed in compliance with §16.2a); and

For any other portion of the impoundment, the repaired liner system must be certified by a qualified engineer as meeting the design specifications approved in the permit.

- e) A surface impoundment that has been removed from service in accordance with the requirements of this section and that is not being repaired must be closed in accordance with the provisions of §16.6.

16.6 Closure and post-closure care

- a) At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste if they are identified as such in the LHWR, or
- b) If some waste residues or contaminated materials are left in place at final closure, the owner or operator must comply with all post-closure requirements contained in §§19.10 and 19.11; including maintenance and monitoring throughout the post-closure care period (specified in the permit under §19.11). The owner or operator must:
 - 1) Maintain the integrity and effectiveness of the final cover including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events;
 - 2) Maintain and monitor the leak detection system where such a system is present between double liner systems;
 - 3) Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of Chapter 18; and
 - 4) Prevent run-on and run-off from eroding or otherwise damaging the final cover.
- c) Manage the closure to:
 - 1) Eliminate free liquids by removing liquid wastes or solidifying the remaining wastes and residues;

- 2) Stabilize remaining wastes to a bearing capacity sufficient to support final cover; and
- 3) Cover the surface impoundment with a final cover designed and constructed to:

Provide long-term minimization of the migration of liquids through the closed impoundment;

Function with minimum maintenance;

Promote drainage and minimize erosion or abrasion of the final cover;

Accommodate settling and subsidence so that the cover's integrity is maintained; and

Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

d) Special closure

- 1) If an owner or operator plans to close a surface impoundment in accordance with §16.6a) of this part, and the impoundment does not comply with the liner requirements of §16.2a) and is not exempt from them in accordance with §16.2b), then:

The closure plan for the impoundment under §19.6 must include both a plan for complying with §16.6a) and a contingent plan for complying with §16.6b) in case all contaminated subsoils cannot be practicably removed at closure; and

The owner or operator must prepare a contingent post-closure plan under §19.12 complying with §16.6b) of this section in case all contaminated subsoils cannot be practicably removed at closure.

- 2) The cost estimates calculated under §§20.3 and 20.5 for closure and post-closure care of an impoundment subject to this subpart must include the cost of complying with the contingent post-closure plan, but are not required to include the cost of expected closure under §16.6b).

- e) During the post-closure care period, if liquids leak into a leak detection system the owner or operator must notify the Administrative Authority of the leak in writing within seven days after detecting the leak. The Administrative Authority will modify the permit to require compliance with the requirements of Chapter 18.

16.7 Special requirements for ignitable or reactive waste -- Ignitable or reactive waste must not be placed in a surface impoundment, unless:

- a) The waste is treated, rendered, or mixed before or immediately after placement in the impoundment so that:

- 1) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under the definition of ignitability or corrosivity in the LHWR; and
 - 2) §9.9 is complied with; or
 - 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
 - c) The surface impoundment is used solely for emergencies.
- 16.8 Special requirements for incompatible wastes -- Incompatible wastes, or incompatible wastes and materials, must not be placed in the same surface impoundment, unless §9.9 is complied with.

CHAPTER 17
INCINERATORS

17.1 Purpose -- To insure necessary combustion and air pollution control to treat waste listed in the permit.

17.2 General requirements

- a) The operator of a hazardous waste incinerator shall secure a permit from the Air Quality Division of the Department.

[Comment: The permit application must also include the information required in §17.8]

- b) The operator shall provide the Administrative Authority with an acceptable set of performance standards, principally the composition of flue gases, provisions for shutdown, and an operations warranty from the operator certifying that the equipment and operation satisfy the purposes of the permit, all as detailed in this Chapter.
- c) Incoming waste monitoring is governed by §9.14.
- d) An air monitoring system in the exhaust is required which will permit the required Department evaluation.

17.3 Applicability

- a) These regulations apply to owners and operators of facilities that incinerate hazardous waste. All permit conditions, compliance orders, compliance schedules and other requirements of the permit required, shall be obtained pursuant to the LHWR and any other requirements pursuant to the regulations of the Louisiana Air Control Law.
- b) The Administrative Authority, in establishing permit conditions in the application, must exempt the applicant from all requirements of this Chapter except Waste Analyses (§17.4) and Closure (§17.11) if he finds the waste to be burned is:
 - 1) Listed as a hazardous waste solely because it is ignitable or corrosive or both as defined in §24.2;
 - 2) Listed as a hazardous waste because it is reactive for characteristics other than:

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,

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 to present a danger to human health or the environment and will not be burned when other hazardous wastes are present in the combustion zone, or

- 3) It is a hazardous waste solely because it possesses the characteristics of ignitability, corrosivity, or both, as determined by the test for characteristics of hazardous wastes under Chapter 24.
- 4) A hazardous waste solely because it possesses any of the reactivity characteristics as defined below and will not be burned when other hazardous wastes are present in the combustion zone:

It reacts violently with water,

It forms potentially explosive mixtures with water,

It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement,

It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure,

It is a forbidden explosive as defined in DPS 173.51 or a Class A explosive as defined in 173.53, or a Class B explosive as defined in 173.88, or

It is normally unstable and readily undergoes violent change without detonating; and

- 5) If the waste analysis shows that the waste contains none of the hazardous constituents listed in Table 1 which would reasonably be expected to be in the waste.
- c) If the waste to be burned is one which is described in §17.3b) above and contains insignificant concentrations of the hazardous constituents listed in Table 1 then the Administrative Authority may, in establishing permit conditions, exempt the applicant from all requirements of this section except Waste Analyses (§17.4) and Closure (§17.11) unless he finds that the waste will pose a threat to human health and the environment when burned in an incinerator.
 - d) The owner or operator of an incinerator may conduct trial burns subject only to the requirements of §17.8.

TABLE 1. HAZARDOUS CONSTITUENTS.

Acetonitrile (Ethanenitrile)
 Acetophenone (Ethanone, 1-phenyl)
 3-(alpha-Acetylbenzyl)-4-hydroxycoumarin and salts (Warfarin)
 2-Acetylaminofluorene [Acetamide, N-(9H-fluoren-2-yl)-]
 Acetyl chloride (Ethanoyl chloride)
 1-Acetyl-2-thiourea [Acetamide, N-(aminothioxomethyl)-]
 Acrolein (2-Propenal)
 Acrylamide (2-Propenamide)
 Acrylonitrile (2-Propenenitrile)
 Aflatoxins
 Aldrin (1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a,8b-hexahydro-endo.exo-1.4:5.8-Dimethanonaphthalene)
 Allyl alcohol (2-Propen-1-ol)
 Aluminum phosphide
 4-Aminobiphenyl [(1,1-Biphenyl)-4-amine]
 6-Amino-1,1a,2,8,8a,8b-hexahydro-8-(hydroxymethyl)-8a-methoxy-5-methyl-carbamate
 azirino(2',3':3.4)pyrrolo(1.2-a)indole-4,7-dione(ester)(Mitomycin C)[Azirino-(2'3':3.4)pyrrolo(1.2-a)indole-4,7-dione,6-amino-8-(((amino-carbonyl)oxy)methyl)-1,1a,2,8,8a,8b-hexahydro-8amethoxy-5-methy-)
 5-(Aminomethyl)-3-isoxazolol[3(2H)-Isoxazolone,5-(aminomethyl)-]4-Aminopyridine(4-Pyridinamine)
 Amitrole(1H-1,2,4-Triazol-3-amine)
 Aniline (Benzenamine)
 Antimony and compounds, N.O.S.*
 Aramite (Sulfurous acid, 2-chloroethyl-2-[4-(1,1-dimethylethyl)phenoxy]-1-methyl-ethyl ester)
 Arsenic and compounds, N.O.S.*
 Arsenic acid (Orthoarsenic acid)
 Arsenic pentoxide [Arsenic (V) oxide]
 Arsenic trioxide [Arsenic (III) oxide]
 Auramine [Benzenamine,4.4'-carbonimidoylbis(N,N-Dimethyl-monohydrochloride)]
 Azaserine [L-Serine, diazoacetate (ester)]
 Barium and compounds, N.O.S.*
 Barium cyanide
 Benz(c)acridine(3,4-Benzacridine)
 Benz(a)anthracene(1,2-Benzanthracene)
 Benzene (Cyclohexatriene)
 Benzenearsonic acid (Arsonic acid, phenyl-)
 Benzene, dichloromethyl- (Benzal chloride)
 Benzenethiol (Thiophenol)
 Benzidine [(1,1'-Biphenyl)-4,4'diamine]
 Benzo(b)fluoranthene(2,3-Benzofluoranthene)
 Benzo(j)fluoranthene(7,8-Benzofluoranthene)
 Benzo(a)pyrene(3,4-Benzopyrene)
 p-Benzoquinone(1,4-Cyclohexadienedione)
 Benzotrichloride (Benzene, trichloromethyl-)
 Benzyl chloride [Benzene,(chloromethyl)-]

(continued)

TABLE 1. (continued)

Beryllium and compounds, N.O.S.*

Bis(2-chloroethoxy)methane [Ethane,1,1'-(methylenebis(oxy))bis(2-chloro-)]

Bis(2-chloroethyl)ether [Ethane,1,1'-oxybis(2-chloro-)]

N,N-Bis(2-chloroethyl)-2-naphthylamine (Chlornaphazine)

Bis(2-chloroisopropyl) ether [Propane,2,2'-oxybis(2-chloro-)]

Bis(chloromethyl) ether [Methane, oxybis(chloro-)]

Bis(2-ethylhexyl) phthalate [1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl)ester]

Bromoacetone (2-Propanone, 1-bromo-)

Bromomethane (Methyl bromide)

4-Bromophenyl phenyl ether (Benzene,1-bromo-4-phenoxy-)

Brucine (Strychnidin-20-one,2,3-dimethoxy-)

2-Butanone peroxide (Methyl ethyl ketone, peroxide)

Butyl benzyl phthalate (1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester)

2-sec-Butyl-4,6-dinitrophenol (DNBP) [Phenol,2,4-dinitro-6-(1-methylpropyl)-]

Cadmium and compounds, N.O.S.*

Calcium chromate (Chromic acid, calcium salt)

Calcium cyanide

Carbon disulfide (Carbon bisulfide)

Carbon oxyfluoride (Carbonyl fluoride)

Chloral (Acetaldehyde, trichloro-)

Chlorambucil [Butanoic acid,4-[bis(2-chloroethyl)amino]benzene-]

Chlordane (alpha and gamma isomers)(4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-3,4,7,7a-tetrahydro-)(alpha and gamma isomers)

Chlorinated benzenes, N.O.S.*

Chlorinated ethane, N.O.S.*

Chlorinated fluorocarbons, N.O.S.*

Chlorinated naphthalene, N.O.S.*

Chlorinated phenol, N.O.S.*

Chloroacetaldehyde (Acetaldehyde, chloro-)

Chloroalkyl ethers, N.O.S.*

p-Chloroaniline (Benzenamine,4-chloro-)

Chlorobenzene (Benzene, chloro-)

Chlorobenzilate [Benzenoacetic acid,4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-ethyl ester]

p-Chloro-in-cresol (Phenol,4-chloro-3-methyl)

1-Chloro-2,3-epoxypropane [Oxirane,2-(chloromethyl)-]

2-Chloroethyl vinyl ether [Ethane,(2-chloroethoxy)-]

Chloroform (Methane, trichloro-)

Chloromethane (Methyl chloride)

Chloromethyl methyl ether (Methane, chloromethoxy-)

2-Chloronaphthalene (Naphthalene, beta-chloro-)

2-Chlorophenol (Phenol, o-chloro-)

1-(o-Chlorophenyl)thiourea [Thiourea,(2-chlorophenyl)-]

3-Chloropropionitrile (Propanenitrile,3-chloro-)

Chromium and compounds, N.O.S.*

Chrysene (1,2-Benzphenanthrene)

Citrus red No. 2 [2-Naphthol,1-((2,5-dimethoxyphenyl)azo)-]

(continued)

TABLE 1. (continued)

Coal tars
 Copper cyanide
 Creosote (Creosote, wood)
 Cresols (Cresylic acid) (Phenol, methyl-)
 Crotonaldehyde (2-Butenal)
 Cyanides (soluble salts and complexes), N.O.S.*
 Cyanogen (Ethanedinitrile)
 Cyanogen bromide (Bromine cyanide)
 Cyanogen chloride (Chlorine cyanide)
 Cycasin [beta-D-Glucopyranoside,(methyl-ONN-azoxy)methyl-]
 2-Cyclohexyl-4,6-dinitrophenol (Phenol,2-cyclohexyl-4,6-dinitro-)
 Cyclophosphamide [2H-1,3,2-Oxazaphosphorine,(bis(2-chloroethyl)amino)-tetrahydro-, 2-oxide]
 Daunomycin (5,12-Naphthacenedione,(8S-cis)-8-acetyl-10-)(3-amino-2,3,6-trideoxy)-alpha-L-lyxo-hexopyranosyl)oxy)-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-)
 DDD (Dichlorodiphenyldichloroethane) [Ethane,1,1-dichloro-2,2-bis(p-chloro-phenyl)-]
 DDE [Ethylene,1,1-dichloro-2,2-bis(4-chlorophenyl)-]
 DDT (Dichlorodiphenyltrichloroethane) [Ethane,1,1,1-trichloro-2,2-bis(p-chloro-phenyl)-]
 Diallylate [S-(2,3-dichloroallyl) diisopropylthiocarbamate]
 Dibenz(a,h)acridine (1,2,5,6-Dibenzacridine)
 Dibenz(a,j)acridine (1,2,7,8-Dibenzacridine)
 Dibenz(a,h)anthracene (1,2,5,6-Dibenzanthracene)
 7H-Dibenzo(c,g)carbazole (3,4,5,6-Dibenzcarbazole)
 Dibenzo(a,e)pyrene (1,2,4,5-Dibenzpyrene)
 Dibenzo(a,h)pyrene (1,2,5,6-Dibenzpyrene)
 Dibenzo(a,i)pyrene (1,2,7,8-Dibenzpyrene)
 1,2-Dibromo-3-chloropropane (Propane,1,2-dibromo-3-chloro-)
 1,2-Dibromoethane (Ethylene dibromide)
 Dibromomethane (Methylene bromide)
 Di-n-butyl phthalate (1,2-Benzenedicarboxylic acid, dibutyl ester)
 o-Dichlorobenzene (Benzene,1,2-dichloro-)
 m-Dichlorobenzene (Benzene,1,3-dichloro-)
 p-Dichlorobenzene (Benzene,1,4-dichloro-)
 Dichlorobenzene, N.O.S.* (Benzene, dichloro-, N.O.S.*)
 3,3'-Dichlorobenzidine [(1,1'-Biphenyl)-4,4'-diamine,3,3'-dichloro-)
 1,4-Dichloro-2-butene (2-Butene,1,4-dichloro-)
 Dichlorodifluoromethane (Methane, dichlorodifluorop-)
 1,1-Dichloroethane (Ethylidene dichloride)
 1,2-Dichloroethane (Ethylene dichloride) trans-1,2-Dichloroethene (1,2-Dichloro-ethylene)
 Dichloroethylene, N.O.S.* (Ethene, dichloro-,N.O.S.*)
 1,1-Dichloroethylene (Ethene, 1,1-dichloro-)
 Dichloromethane (Methylene chloride)
 2,4-Dichlorophenol (Phenol, 2,4-dichloro-)
 2,6-Dichlorophenol (Phenol, 2,6-dichloro-)

(continued)

TABLE 1. (continued)

2,4-Dichlorophenoxyacetic acid (2,4-D), salts and esters (Acetic acid, 2,4-dichloro-phenoxy-, salts and esters)
 Dichlorophenylarsine (Phenyl dichloroarsine)
 Dichloropropane, N.O.S.* (Propane, dichloro-, N.O.S.*)
 1,2-Dichloropropane (Propylene dichloride)
 Dichloropropanol, N.O.S.* (Propanol, dichloro-, N.O.S.*)
 Dichloropropene, N.O.S.* (Propene, dichloro-, N.O.S.*)
 1,3-Dichloropropene (1-Propene, 1,3-dichloro-)
 Dieldrin (1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octa-hydro-endo, exo-1,4,:5,8-Dimethanonaphthalene)
 1,2:3,4-Diepoxybutane (2,2'-Bioxirane)
 Diethylarsine (Arsine, diethyl-)
 N,N-Diethylhydrazine, Hydrazine, 1,2-diethyl)
 0,0-Diethyl S-methyl ester of phosphorodithioic acid (Phosphorodithioic acid, 0,0-diethyl S-methyl ester)
 0,0-Diethylphosphoric acid, 0-p-nitrophenyl ester (Phosphoric acid, diethyl p-nitrophenyl ester)
 Diethylstilbestrol [4,4'-Stilbenediol, alpha, alpha-diethyl, bis(dihydrogen phosphate, (E)-)]
 Dihydrosafrole (Benzene, 1,2-methylenedioxy-4-propyl-]
 3,4-Dihydroxy-alpha-(methylamino)methyl benzyl alcohol [1,2-Benzenediol, 4-(1-hydroxy-2-(methylamino)ethyl)-]
 Diisopropylfluorophosphate (DFP) [Phosphorofluoridic acid, bis(1-methylethyl) ester]
 Dimethoate (Phosphorodithioic acid, 0, 0-dimethyl S-[2-(methylamino)-2-oxoethyl] ester)
 3,3'-Dimethoxybenzidine [(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethoxy-]
 p-Dimethylaminoazobenzene [Benzenamine, N,N-dimethyl-4-(phenylazo)-]
 7,12-Dimethylbenz(a)anthracene (1,2-Benzanthracene, 7,12-dimethyl-]
 3,3'-Dimethylbenzidine [(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethyl-]
 Dimethylcarbamoyl chloride (Carbamoyl chloride, dimethyl-)
 1,1-Dimethylhydrazine (Hydrazine, 1,1-dimethyl-]
 1,2-Dimethylhydrazine (Hydrazine, 1,2-dimethyl-]
 3,3-Dimethyl-1-(methylthio)-2-butanone, O-[(methylamino)carbonyl]oxime (Thiofanox)
 alpha, alpha-Dimethylphenethylamine (Ethanamine, 1,1-dimethyl-2-phenyl-)
 2,4-Dimethylphenol (Phenol, 2,4-dimethyl-)
 Dimethylphthalate (1,2-Benzenedicarboxylic acid, dimethyl ester)
 Dimethyl sulfate (Sulfuric acid, dimethyl ester)
 Dinitrobenzene, N.O.S.* (Benzene, dinitro-, N.O.S.*)
 4,6-Dinitro-o-cresol and salts (Phenol, 2,4-dinitro-6-methyl-, and salts)
 2,4-Dinitrophenol (Phenol, 2,4-dinitro-)
 2,4-Dinitrotoluene (Benzene, 1-methyl-2,4-dinitro-)
 2,6-Dinitrotoluene (Benzene, 1-methyl-2,6-dinitro-)
 Di-n-octyl phthalate (1,2-Benzenedicarboxylic acid, dioctyl ester)
 1,4-Dioxane (1,4-Diethylene oxide)
 Diphenylamine (Benzenamine, N-phenyl-)
 1,2-Diphenylhydrazine (Hydrazine, 1,2-diphenyl-)

(continued)

TABLE 1. (continued)

Di-n-Propylnitrosamine (N-Nitroso-di-n-propylamine)
 Disulfoton [0,0-diethyl S-(2-(ethyl thio)ethyl)phosphorodithioate]
 2,4-Dichlorobiphenyl (Thioimidodicarbonic diamide)
 Endosulfan (5-Norbornene, 2,3-dimethanol, 1,4,5,6,7,7-hexachloro-, cyclic sulfite)
 Endrin and metabolites (1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octa-
 hydro-endo,endo-1,4,5,8-dimethanonaphthalene, and metabolites)
 Ethyl carbamate (Urethane) (Carbamic acid, ethyl ester)
 Ethyl cyanide (propanenitrile)
 Ethylenebisdithiocarbamic acid, salts and esters (1,2-Ethanedithiolbiscarbamodithioic
 acid, salts and esters)
 Ethyleneimine (Aziridine)
 Ethylene oxide (Oxirane)
 Ethylenethiourea (2-Imidazolidinethione)
 Ethyl methacrylate (2-Propenoic acid, 2-methyl-ethyl ester)
 Ethyl methanesulfonate (Methanesulfonic acid, ethyl ester)
 Fluoranthene (Benzo(j,k)fluorene)
 Fluorine
 2-Fluoroacetamide (Acetamide, 2-fluoro-)
 Fluoroacetic acid, sodium salt (Acetic acid, fluoro-, sodium salt)
 Formaldehyde (Methylene oxide)
 Formic acid (Methanoic acid)
 Glycidylaldehyde (1-Propanol-2,3-epoxy)
 Halomethane, N.O.S.*
 Heptachlor (4,7 Methano-1H-indene,1,4,5,6,7,8,8-heptachloro-3a,4,7,7-tetrahydro-)
 Heptachlor epoxide (alpha, beta, and gamma isomers) (4,7-Methano-1H-indene,1,4,5,6,
 7,8,8-heptachloro-2,3-epoxy-3a,4,7,7-tetrahydro-, alpha, beta, and gamma isomers)
 Hexachlorobenzene (Benzene, hexachloro-)
 Hexachlorobutadiene (1,3-Butadiene, 1,1,2,3,4,4-hexachloro-)
 Hexachlorocyclohexane (all isomers) (Lindane and isomers)
 Hexachlorocyclopentadiene (1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-)
 Hexachloroethane (Ethane, 1,1,1,2,2,2-hexachloro-)
 1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo, endo-dimethanonaph-
 thalene (Hexachlorohexahydro-endo,endo-dimethanonaphthalene)
 Hexachlorophene (2,2'-Methylenebis(3,4,6-trichlorophenol))
 Hexachloropropene (1-Propene, 1,1,2,3,3,3-hexachloro-)
 Hexaethyl tetraphosphate (Tetraphosphoric acid, hexaethyl ester)
 Hydrazine (Diamine)
 Hydrocyanic acid (Hydrogen cyanide)
 Hydrofluoric acid (Hydrogen fluoride)
 Hydrogen sulfide (Sulfur hydride)
 Hydroxydimethylarsine oxide (Cacodylic acid)
 Indeno (1,2,3-cd)pyrene (1,10-(1,2-phenylene)pyrene)
 Iodomethane (Methyl iodide)
 Iron dextran (Ferric dextran)
 Isocyanic acid, methyl ester (Methyl isocyanate)
 Isobutyl alcohol (1-Propanol, 2-methyl-)
 Isosafrole (Benzene, 1,2-methylenedioxy-4-allyl-)

(continued)

TABLE 1. (continued)

Kepone (Decachlorooctahydro-1,3,4-Methano-2H-cyclobuta(cd)pentalen-2-one)
 Lasiocarpine (2-Butenoic acid, 2-methyl-,7-[(2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutoxy)methyl]-2,3,4,7a-tetrahydro-1H-pyrrolizin-1-yl ester]
 Lead and compounds, N.O.S.*
 Lead acetate (Acetic acid, lead salt)
 Lead phosphate (Phosphoric acid, lead salt)
 Lead subacetate (Lead, bis(acetato-0)tetrahydroxytri-)
 Maleic anhydride (2,5-Furandione)
 Maleic hydrazide (1,2-Dihydro-3,6-pyridazinedione)
 Malononitrile (Propanedinitrile)
 Melphalan [Alanine, 3-[p-bis(2-chloroethyl)amino]phenyl-,L-]
 Mercury fulminate (Fulminic acid, mercury salt)
 Mercury and compounds, N.O.S.*
 Methacrylonitrile (2-Propenenitrile, 2-methyl-)
 Methanethiol (Thiomethanol)
 Methapyrilene (Pyridine, 2-[(2-dimethylamino)ethyl]-2-thenylamino-)
 Metholmyl (Acetimidic acid, N-[(methylcarbamoxy)oxy]thio-,methyl ester)
 Methoxychlor [Ethane, 1,1,1-trichloro-2,2'-bis(p-methoxyphenyl)-]
 2-Methylaziridine (1,2-Propylenimine)
 3-Methylcholanthrene (Benz(j)aceanthrylene,1,2-dihydro-3-methyl-)
 Methyl chlorocarbonate (Carbonochloridic acid, methyl ester)
 4,4'-Methylenebis(2-chloroaniline)[Benzenamine, 4,4'-methyenebis-(2-chloro-)]
 Methyl ethyl ketone (MEK) 2-Butanone)
 Methyl hydrazine (Hydrazine, methyl-)
 2-Methylactonitrile (Propanenitrile, 2-hydroxy-2-methyl-)
 Methyl methacrylate (2-Propenoic acid, 2-methyl-,methyl ester)
 Methyl methanesulfonate (Methanesulfonic acid, methyl ester)
 2-Methyl-2-(methylthio)propionaldehyde-o-(methylcarbonyl) oxime (Propanal,2-methyl-2-(methylthio)-O-[(methylamino)carbonyl)oxime]
 N-Methyl-N'-nitro-N-nitrosoguanidine [Guanidine, N-nitroso-N-methyl-N'-nitro-)
 Methyl parathion (O,O-dimethyl O-(4-nitrophenyl) phosphorothioate)
 Methyl thiouracil (4-1H-Pyrimidinone,2,3-dihydro-6-methyl-2-thioxo-)
 Mustard gas [Sulfide, bis(2-chloroethyl)-]
 Naphthalene
 1,4-Naphthoquinone (1,4-Naphthalenedione)
 1-Naphthylamine (alpha-Naphthylamine)
 2-Naphthylamine (beta-Naphthylamine)
 1-Naphthyl-2-thiourea (Thiourea, 1-naphthalenyl-)
 Nickel and compounds, N.O.S.*
 Nickel carbonyl (Nickel tetracarbonyl)
 Nickel cyanide [Nickel (II) cyanide]
 Nicotine and salts (Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts)
 Nitric oxide [Nitrogen (II) oxide]
 p-Nitroaniline (Benzenamine, 4-nitro-)
 Nitrobenzine (Benzene, nitro-)
 Nitrogen dioxide [Nitrogen (IV) oxide]

(continued)

TABLE 1. (continued)

Nitrogen mustard and hydrochloride salt [Ethanamine, 2-chloro-, N-(2-chloroethyl)-N-methyl-, and hydrochloride salt]
 Nitrogen mustard N-Oxide and hydrochloride salt [Ethanamine, 2-chloro-, N-(2-chloroethyl)-N-methyl-, and hydrochloride salt]
 Nitroglycerine (1,2,3-Propanetriol, trinitrate)
 4-Nitrophenol (Phenol, 4-nitro-)
 4-Nitroquinoline-1-oxide (Quinoline, 4-nitro-1-oxide-)
 Nitrosamine, N.O.S.*
 N-Nitrosodi-n-butylamine (1-Butanamine, N-butyl-N-nitroso-)
 N-Nitrosodiethanolamine (Ethanol, 2,2'-(nitrosoimino)bis-)
 N-Nitrosodiethylamine (Ethanamine, N-ethyl-N-nitroso-)
 N-Nitrosodimethylamine (Dimethylnitrosamine)
 N-Nitroso-N-ethylurea (Carbamide, N-ethyl-N-nitroso-)
 N-Nitrosomethylethylamine (Ethanamine, N-methyl-N-nitroso-)
 N-Nitroso-N-methylurea (Carbamide, N-methyl-N-nitroso-)
 N-Nitroso-N-methylurethane (Carbamic acid, methylnitroso-, ethyl ester)
 N-Nitroso-N-methylurethane [Ethanamine, N-methyl-N-nitroso-)
 N-Nitrosomorpholine (Morpholine, N-nitroso-)
 N-Nitrosornornicotine (Nornicotine, N-nitroso-)
 N-Nitrosopiperidine (Pyridine, hexahydro-, N-nitroso-)
 Nitrosopyrrolidine (Pyrrole, tetrahydro-, N-nitroso-)
 N-Nitrososarcosine (Sarcosine, N-nitroso-)
 5-Nitro-o-toluidine (Benzenamine, 2-methyl-5-nitro-)
 Octamethylpyrophosphoramidate (Diphosphoramidate, octamethyl-)
 Osmium tetroxide [Osmium (VIII) oxide]
 7-Oxabicyclo(2,2,1)heptane-2,3-dicarboxylic acid (Endothal)
 Paraldehyde (1,3,5-Trioxane, 2,4,6-trimethyl-)
 Parathion (Phosphorothioic acid, 0,0-diethyl 0-(p-nitrophenyl) ester)
 Pentachlorobenzene (Benzene, pentachloro-)
 Pentachloroethane (Ethane, pentachloro-)
 Pentachloronitrobenzene (PCNB) (Benzene, pentachloronitro-)
 Pentachlorophenol (Phenol, pentachloro-)
 Phenacetin [Acetamide, N-(4-ethoxyphenyl)-]
 Phenol (Benzene, hydroxy-)
 Phenylenediamine (Benzenediamine)
 Phenylmercury acetate (Mercury, acetatophenyl-)
 N-Phenylthiourea (Thiourea, phenyl-)
 Phosgene (Carbonyl chloride)
 Phosphine (Hydrogen phosphide)
 Phosphorodithioic acid, 0,0-diethyl S-[(ethylthio)methyl] ester (Phorate)
 Phosphorothioic acid, 0,0-dimethyl 0-[p-((dimethylaminosulfonyl)phenyl)] ester (Famphur)
 Phthalic acid esters, N.O.S.* (Benzene, 1,2-dicarboxylic acid, esters, N.O.S.*)
 Phthalic anhydride (1,2-Benzenedicarboxylic acid anhydride)
 2-Picoline (Pyridine, 2-methyl-)
 Polychlorinated biphenyl, N.O.S.*
 Potassium cyanide

(continued)

TABLE 1. (continued)

Potassium silver cyanide [Argentate(1-), dicyano-, potassium]
 Pronamide [3,5-Dichloro-N-(1,1-dimethyl-2-propynyl)benzamide]
 1,3-Propane sultone (1,2-Oxathiolane, 2,2-dioxide)
 n-Propylamine (1-Propanamine)
 Propylthiouracil (Undecamethylenediamine, N,N'-bis(2-chlorobenzyl)-, dihydrochloride)
 2-Propyn-1-ol (Propargyl alcohol)
 Pyridine
 Reserpine [Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-((3,4,5-trimethoxybenzoyl)oxy)-methyl ester]
 Resorcinol (1,3-Benzenediol)
 Saccharin and salts (1,2-Benzoisothiazolin-3-one, 1,1-dioxide, and salts)
 Safrole (Benzene, 1,2-methylenedioxy-4-allyl-)
 Selenious acid (Selenium dioxide)
 Selenium and compounds, N.O.S.*
 Selenium sulfide (Sulfur selenide)
 Selenourea (Carbamimidoseleonic acid)
 Silver and compounds, N.O.S.*
 Silver cyanide
 Sodium cyanide
 Streptozotocin [D-Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-]
 Strontium sulfide
 Strychnine and salts (Strychnidin-10-one, and salts)
 1,2,4,5-Tetrachlorobenzene (Benzene, 1,2,4,5-tetrachloro-)
 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) (Dibenzo-p-dioxin, 2,3,7,8-tetrachloro-)
 Tetrachloroethane, N.O.S.* (Ethane, tetrachloro-, N.O.S.*)
 1,1,1,2-Tetrachlorethane (Ethane, 1,1,1,2-tetrachloro-)
 1,1,2,2-Tetrachlorethane (Ethane, 1,1,2,2-tetrachloro-)
 Tetrachloroethylene (Ethene, 1,1,2,2-tetrachloro-)
 Tetrachloromethane (Carbon tetrachloride)
 2,3,4,6-Tetrachlorophenol (Phenol, 2,3,4,6-tetrachloro-)
 Tetraethyldithiopyrophosphate (Dithiopyrophosphoric acid, tetraethyl-ester)
 Tetraethyl lead (Plumbane, tetraethyl-)
 Tetraethylpyrophosphate (Pyrophosphoric acid, tetraethyl ester)
 Tetranitromethane (Methane, tetranitro-)
 Thallium and compounds, N.O.S.*
 Thallous oxide [Thallium (III) oxide]
 Thallium (I) acetate [Acetic acid, thallium (I) salt]
 Thallium (I) carbonate [Carbonic acid, dithallium (I) salt]
 Thallium (I) chloride
 Thallium (I) nitrate [Nitric acid, thallium (I) salt]
 Thallium selenite
 Thallium (I) sulfate [Sulfuric acid, thallium (I) salt]
 Thioacetamide (Ethanethioamide)
 Thiosemicarbazide (Hydrazinecarbothioamide)
 Thiourea (Carbamide thio-)
 Thiuram [Bis(dimethylthiocarbamoyl)disulfide]

(continued)

TABLE 1. (continued)

Toluene (Benzene, methyl-)
 Toluenediamine (Diaminotoluene)
 o-Toluidine hydrochloride (Benzenamine, 2-methyl-,hydrochloride)
 Tolyene diisocyanate (Benzene, 1,3-diisocyanatomethyl-)
 Toxaphene (Camphene, octachloro-)
 Tribromomethane (Bromoform)
 1,2,4-Trichloroethane (Benzene, 1,2,4-trichloro-)
 1,1,1-Trichloroethane (Methyl chloroform)
 1,1,2-Trichloroethane (Ethane, 1,1,2-trichloro-)
 Trichloroethene (Trichloroethylene)
 Trichloromethanethiol (Methanethiol, trichloro-)
 Trichloromonofluoromethane (Methane, trichlorofluoro-)
 2,4,5-Trichlorophenol (Phenol,2,4,5-trichloro-)
 2,4,6-Trichlorophenol (Phenol,2,4,6-trichloro-)
 2,4,5-Trichlorophenoxyacetic acid (2,4,5-T) (Acetic acid, 2,4,5-trichlorophenoxy-)
 2,4,5-Trichlorophenoxypropionic acid (2,4,5-TP)(Silvex)[Propionoic acid, 2-(2,4,5-trichlorophenoxy)-]
 Trichloropropane, N.O.S.* (Propane, trichloro-, N.O.S.*)
 1,2,3-Trichloropropane (Propane, 1,2,3-trichloro-)
 0,0,0-Triethyl phosphorothioate (Phosphorothioic acid, 0,0,0-triethyl ester)
 sym-Trinitrobenzene (Benzene, 1,3,5-trinitro-)
 Tris-(1-aziridinyl) phosphine sulfide [Phosphine sulfide, tris(1-aziridinyl-)]
 Tris (2,3-dibromopropyl) phosphate(1-Propanol, 2,3-dibromo-,phosphate)
 Trypan blue (2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl(1,1'-biphenyl-4, 4'-diyl)bis(azo))bis(5-amino-4-hydroxy-,tetrasodium salt)
 Uracil mustard [Uracil 5-[bis(2-chloroethyl)aminol-]
 Vanadic acid, ammonium salt (ammonium vanadate)
 Vanadium pentoxide [Vanadium (V) oxide]
 Vinyl chloride (Ethene, chloro-)
 Zinc cyanide
 Zinc phosphide

*N.O.S.: Not otherwise specified; signifies those members of the general class not specifically listed by name in this table.

17.4 Waste analysis

- a) As a portion of the trial burn plan required by §17.8 or with the permit application, the owner or operator must have included an analyses of the waste feed sufficient to provide all information required by §§9.10a) and 9.10b). Owners or operators of new hazardous waste incinerators must provide the information required by §17.8 to the greatest extent possible.
- b) Throughout normal operation the owner or operator must conduct sufficient waste analysis to verify that waste feed to the incinerator is within the physical and chemical composition limits specified in his permit [under §17.9b)].

17.5 Principal organic hazardous constituents (POHCs)

- a) Principal organic hazardous constituents (POHCs) in the waste feed must be treated to the extent required by the performance standard of §17.6.
- b) One or more POHCs will be specified in the facility's permit from among those constituents listed in Table 1 for each waste feed to be burned. This specification will be based on the degree of difficulty of incineration of the organic constituents in the waste, and on their concentration or mass in the waste feed, considering the results of waste analyses and trial burns, or alternative data submitted with the facility's permit application. Organic constituents which represent the greatest degree of difficulty of incineration will be those most likely to be designated as POHCs. Constituents are more likely to be designated as POHC's if they are present in large quantities or concentrations in the waste.
- c) Trial POHCs will be designated for performance of trial burns in accordance with the procedure specified in §17.8 for obtaining trial burn permits.

17.6 Performance standards

- a) An incinerator burning hazardous waste must be designed, constructed, and maintained so that, when operated in accordance with operating requirements specified under §17.9, it will meet the following standards:
 - 1) An incinerator burning hazardous waste must achieve a destruction and removal efficiency (DRE) of 99.99 percent for each POHC designated in its permit for each waste feed. DRE is determined for each POHC from the following equation:

$$DRE = \frac{W_{in} - W_{out}}{W_{in}} \times 100\%$$

Where: W_{in} = Mass feed rate of one principal organic hazardous constituent (POHC) in the waste stream feeding the incinerator, and

W_{out} = Mass emission rate of the same POHC present in exhaust emissions prior to release to the atmosphere.

- 2) An incinerator burning hazardous waste and producing stack emissions of more than 1.8 kilograms per hour (4 pounds per hour) of hydrogen chloride (HCl) must control HCl emissions such that the rate of emission is no greater than the larger of either 1.8 kilograms per hour or 1 percent of the HCl in the stack gas prior to entering any pollution control equipment.
- 3) An incinerator burning hazardous waste must not emit particulate matter in excess of 180 milligrams per dry standard cubic meter (0.08 grains per dry standard cubic foot) when corrected for the amount of oxygen in the stack gas according to the formula:

$$P_c = P_m \times \frac{14}{21-Y}$$

Where P_c is the corrected concentration of particulate matter, P_m is the measured concentration of particulate matter, and Y is the measured concentration of oxygen in the stack gas, using the Orsat method for oxygen analysis of dry flue gas. This correction procedure is to be used by all hazardous waste incinerators except those operating under conditions of oxygen enrichment. For these facilities, the Administrative Authority will select an appropriate correction procedure, to be specified in the facility permit.

- b) For purposes of permit enforcement, compliance with the operating requirements specified in the permit under §17.9 will be regarded as in compliance with this part. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the performance requirements of this section may be "information" justifying modification, revocation, or reissuance of a permit under §17.8.

17.7 Hazardous waste permits

- a) The owner or operator of a hazardous waste incinerator may burn only hazardous wastes specified in his permit and only under operating conditions specified in §17.9 except:
 - 1) In approved trial burns as specified in §17.8, or
 - 2) Under exemptions stated in §17.3b).
- b) Other hazardous waste may be burned only after operating conditions have been specified in a new permit or a permit modification as applicable. Operating requirements for new hazardous wastes may be based on either trial burn results or alternate data included in the permit application under §17.8.
- c) The permit for a new hazardous waste incinerator must establish appropriate conditions for each of the applicable requirements of this Chapter, including, but not limited to allowable waste feeds and operating conditions necessary to meet the requirements of §17.9, sufficient to comply with the following standards:
 - 1) For the period beginning with the initial introduction of hazardous waste to the incinerator and ending with initiation of the trial burn, and only for the minimum time required to establish operating conditions required in this part, not to exceed a duration of 720 hours operating time for treatment of hazardous waste, the operating requirements must be those most likely to ensure compliance with the performance standards of §17.6, based on the Administrative Authority's engineering judgment. The Administrative Authority may extend the duration of this period once, for up to 720 additional hours, when good cause for the extension is demonstrated by the applicant;

- 2) For the duration of the trial burn, the operating requirements must be sufficient to demonstrate compliance with the performance standards of §17.6 and must be in accordance with the approved trial burn plan;
- 3) For the period immediately following completion of the trial burn, and only for the minimum period sufficient to allow sample analysis, data computation, and submission of the trial burn results by the applicant, and review of the trial burn results and modification of the facility permit by the Administrative Authority, the operating requirements must be those most likely to ensure compliance with the performance standards of §17.6 based on the Administrative Authority's judgment; and
- 4) For the remaining duration of the permit, the operating requirements must be those demonstrated, in a trial burn or by alternative data specified in §17.8 as sufficient to ensure compliance with the performance standards of §17.6.

17.8 Incinerator permits for new or modified facilities

- a) Conditions -- For the purposes of determining operational readiness following completion of physical construction, the Administrative Authority must establish permit conditions, including but not limited to allowable waste feeds and operating conditions, in the permit to a new hazardous waste incinerator. These permit conditions will be effective for the minimum time required to bring the incinerator to a point of operation readiness sufficient to conduct a trial burn, not to exceed 720 hours operating time for treatment of hazardous waste. The Administrative Authority may extend the duration of this operational period once, for up to 720 additional hours, at the request of the applicant when good cause is shown. The permit may be modified to reflect the extension subject to any minor modification covered in §3.11.
- 1) Applicants must submit a statement in the permit application which suggests the conditions necessary to operate in compliance with the performance standard of section §17.6 during this period. This statement should include, at a minimum, restrictions on waste constituents, waste feed rates, and the operating parameters identified in §17.9.
- 2) The Administrative Authority will review this statement and any other relevant information submitted with the permit application and specify requirements for this period sufficient to meet the performance standards of §17.6 based on his engineering judgment.

[Comment: If data are being submitted instead of a trial burn plan, the data must include the design and operating conditions of the incinerator unit to be used, compared with that for which comparative burn data are available. Additionally the permit application must include a description of the results submitted from any previously conducted trial burn(s) including: (1) sampling and analysis techniques used to calculate performance standards in §17.6; (2) methods

and results of monitoring temperatures, waste feed rates, carbon monoxide, and an appropriate indicator of combustion gas velocity (including a statement concerning the precision and accuracy of this measurement); the certification and results required by §17.6; and a quantification of those hazardous constituents in the waste which may be designated as POHC's based on data submitted from other trial or operational burns which demonstrate compliance with the performance standards of §17.6. The Administrative Authority shall approve a permit application without a trial burn if he finds that: (1) the wastes are sufficiently similar; and (2) the incinerator units are sufficiently similar, and the data from other trial burns are adequate to specify (under §17.9) operating conditions that will ensure that the performance standards in §17.6 will be met by the incinerator.

- b) For the purpose of determining feasibility of compliance with the performance standards of §17.6 and of determining adequate conditions under §17.9, the Administrative Authority must establish conditions in the permit for a new hazardous waste incinerator to be effective during the trial burn. Applicants must propose a trial burn plan which includes the following information:

- 1) An analysis of each waste or mixture of wastes to be burned which includes:

Heat value of the waste in the form and composition in which it will be burned;

Viscosity (if applicable), or description of physical form of the waste; and

An identification of any hazardous, organic constituents listed in Table 1 of this Chapter, which are present in the waste to be burned, except that the applicant need not analyze for constituents listed in Table 1 of this Chapter which would reasonably not be expected to be found in the waste. The constituents excluded from analysis must be identified, and the basis for their exclusion stated. The waste analysis must rely on analytical techniques specified in the LHWR or an equivalent method approved by the Administrative Authority;

The waste analysis must include an approximate quantification of the hazardous constituents identified in the waste, within the precision produced by the analytical methods specified in the LHWR or an equivalent method approved by the Administrative Authority;

- 2) A detailed engineering description of the incinerator for which the permit is sought including:

Manufacturer's name and model number of incinerator (if available);

Type of incinerator;

Linear dimensions of the incinerator unit including the cross sectional area of combustion chamber;

Description of the auxiliary fuel system (type/feed);

Capacity of prime mover;

Description of automatic waste feed cut-off system(s);

Stack gas monitoring and pollution control equipment;

Nozzle and burner design;

Construction materials; and

Location and description of temperature, pressure, and flow indicating and control devices;

- 3) A detailed description of sampling and monitoring procedures, including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis;
- 4) A detailed test schedule for each waste for which the trial burn is planned including date(s), duration, quantity of waste to be burned, and other factors relevant to the Administrative Authority's decision under this section;
- 5) A detailed test protocol, including, for each waste identified, the ranges of temperature, waste feed rate, combustion gas velocity, use of auxiliary fuel, and any other relevant parameters that will be varied to affect the destruction and removal efficiency of the incinerator;
- 6) A description of, and planned operating conditions for, any emission control equipment which will be used;
- 7) Procedures for rapidly stopping waste feed, shutting down the incinerator, and controlling emissions in the event of an equipment malfunction; and
- 8) Such other information as the Administrative Authority reasonably finds necessary to determine whether to approve the trial burn plan in light of the purposes of this subsection and the criteria in §17.8b)11).
- 9) The Administrative Authority, in reviewing the trial burn plan, shall evaluate the sufficiency of the information provided and may require the applicant to supplement this information, if necessary, to achieve the purposes of this section.

10) Based on the waste analysis data in the trial burn plan, the Administrative Authority will specify as trial Principal Organic Hazardous Constituents (POHCs), those constituents for which destruction and removal efficiencies must be calculated during the trial burn. These trial POHCs will be specified by the Administrative Authority based on his estimate of the difficulty of incineration of the constituents identified in the waste analysis, their concentration or mass in the waste feed, and, for wastes listed in Chapter 24 and Table 1 of this Chapter.

11) The Administrative Authority shall approve a trial burn plan if he finds that:

The trial burn is likely to determine whether the incinerator performance standard required by §17.6 can be met;

The trial burn itself will not present an imminent hazard to human health or the environment;

The trial burn will help the Administrative Authority to determine operating requirements to be specified in §17.9 of this section; and

The information sought in this section cannot reasonably be developed through other means.

12) During, or immediately after, each approved trial burn the applicant must make the following determinations:

A quantitative analysis of the trial POHCs in the waste feed to the incinerator;

A quantitative analysis of the exhaust gas for the concentration and mass emissions of the trial POHCs, oxygen (O₂) and hydrogen chloride (HCl);

A quantitative analysis of the scrubber water (if any), ash residues, and other residues, for the purpose of estimating the fate of the trial POHCs;

A computation of destruction and removal efficiency (DRE), in accordance with the DRE formula specified in §17.6;

If the HCl emission rate exceeds 1.8 kilograms of HCl per hour (four pounds per hour), a computation of HCl removal efficiency in accordance with §17.6;

A computation of particulate emissions, in accordance with §17.6;

An identification of sources of fugitive emissions and their means of control;

A measurement of average, maximum, and minimum temperatures and combustion gas velocity;

A continuous measurement of carbon monoxide (CO) in the exhaust gas; and

Such other information as the Administrative Authority may specify as necessary to ensure that the trial burn will determine compliance with the performance standards in §17.6 and to establish the operating conditions required by §17.9 as necessary to meet that performance standard.

- 13) The applicant must submit to the Administrative Authority a certification that the trial burn has been carried out in accordance with the approved trial burn plan, and must submit the results of all the determinations required in §17.8b(12). This submission shall be made within ninety days of completion of the trial burn, or later if approved by the Administrative Authority.
 - 14) All data collected during any trial burn must be submitted to the Administrative Authority following the completion of the trial burn.
 - 15) All submissions required by this paragraph must be certified on behalf of the applicant by the signature of a person authorized to sign a permit application or a report under §§4.4 and 4.5.
 - 16) Based on the results of the trial burn, the Administrative Authority shall set the operating requirements in the final permit according to §17.9. The permit modification shall proceed as a minor modification according to §3.11c).
- c) For the purposes of allowing operation of a new hazardous waste incinerator, following completion of the trial burn and prior to final modification of the permit conditions to reflect the trial burn results, the Administrative Authority may establish permit conditions, including, but not limited to, allowable waste feeds and operating conditions sufficient to meet the requirements of §17.9, in the permit to a new hazardous waste incinerator. These permit conditions will be effective for the minimum time required to complete sample analysis, data computation and submission of the trial burn results by the applicant, and modification of the facility permit by the Administrative Authority.
- 1) Applicants must submit a statement in the permit application, which identifies the conditions necessary to operate in compliance with the performance standards of §17.6 during this period. This statement should include, at a minimum, restrictions on waste constituents, waste feed rates and the operating parameters in §17.9.
 - 2) The Administrative Authority will review this statement and any other relevant information submitted with the permit application and specify those requirements for this period most likely to meet the performance standards of §17.6 based on his engineering judgment.

- d) For the purposes of determining feasibility of compliance with the performance standards of §17.6 and determining adequate operating conditions under §17.9, the applicant for a permit to an existing hazardous waste incinerator may prepare and submit a trial burn plan and perform a trial burn as outlined under §17.8b). Applicants who submit trial burn plans and receive approval before submission of a permit application must complete the trial burn and submit the results, specified in §17.8b)12) with the permit application. If completion of this process conflicts with the date set for submission of the permit application, the applicant must contact the Administrative Authority to establish a later date for submission of the permit application or the trial burn results. If the applicant submits a trial burn plan with the permit application, the trial burn must be conducted and the results submitted within a time period to be specified by the Administrative Authority.

17.9 Operating requirements

- a) An incinerator must be operated in accordance with operating requirements specified in the permit. These will be specified on a case-by-case basis as those demonstrated (in a trial burn or in alternative data as specified in §17.8 and included with a facility's permit application) to be sufficient to comply with the performance standards of §17.6.
- b) Each set of operating requirements will specify the composition of the waste feed (including acceptable variations in the physical or chemical properties of the waste feed which will not affect compliance with the performance requirement of §17.6) to which the operating requirements apply. For each such waste feed, the permit will specify acceptable operating limits including the following conditions:
 - 1) Carbon monoxide (CO) level in the stack exhaust gas;
 - 2) Waste feed rate;
 - 3) Combustion temperature;
 - 4) An appropriate indicator or combustion gas velocity;
 - 5) Allowable variations in incinerator system design or operating procedures; and
 - 6) Such other operating requirements as are necessary to ensure that the performance standards of §17.6 are met.
- c) During start-up and shut-down of an incinerator, hazardous waste (except wastes exempted in accordance with §17.3) must not be fed into the incinerator unless the incinerator is operating within the conditions of operation (temperature, air feed rate, etc.) specified in the permit.
- d) Fugitive emissions from the combustion zone must be controlled by:
 - 1) Keeping the combustion zone totally sealed against fugitive emissions;

- 2) Maintaining a combustion zone pressure lower than atmospheric pressure; or
 - 3) An alternate means of control demonstrated (with the permit application) to provide fugitive emissions control equivalent to maintenance of combustion zone pressure lower than atmospheric pressure.
- e) An incinerator must be operated with a functioning system to automatically cut off waste feed to the incinerator when operating conditions deviate from limits established under §17.9b).
- f) An incinerator must cease operation when changes in waste feed, incinerator design, or operating conditions exceed limits designated in its permit.

17.10 Monitoring and inspections

- a) The owner or operator must monitor, as a minimum, the following while incinerating hazardous waste:
- 1) Combustion temperature, waste feed rate, and the indicator of combustion gas velocity specified in the facility permit must be monitored on a continuous basis;
 - 2) CO must be monitored on a continuous basis at a point in the incinerator downstream of the combustion zone and prior to release to the atmosphere; and
 - 3) Upon request by the Administrative Authority, sampling and analysis of the waste and exhaust emissions must be conducted to verify that the operating requirements established in the permit achieve the performance standards of §17.6.
- b) The incinerator and associated equipment (pumps, valves, conveyors, pipes, etc.) must be subjected to thorough visual inspection, at least daily, for leaks, spills, fugitive emissions, and signs of tampering.
- c) The emergency waste feed cutoff system and associated alarms must be tested at least weekly to verify operability, unless the applicant demonstrates to the Administrative Authority that weekly inspections will unduly restrict or upset operations, and that less frequent inspection will be adequate. At a minimum, operational testing must be conducted at least monthly.
- d) This monitoring and inspection data must be recorded in the operating log as required by §9.12.

17.11 Closure -- At closure the owner or operator must remove all hazardous waste and hazardous waste residues (including, but not limited to, ash, scrubber waters, and scrubber sludges) from the incinerator site. At closure, as throughout the operating period, unless the owner or operator can demonstrate that the residue removed from the incinerator is not a hazardous waste, the

owner or operator becomes a generator of hazardous waste and must manage it in accordance with applicable requirements of Chapters 6 through 23.

CHAPTER 18
GROUNDWATER PROTECTION

18.1 Applicability

- a) Except as provided in §18.1b), the regulations in this Chapter 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 this Chapter for all wastes (or constituents thereof) contained in any such waste management unit at the facility that receives hazardous waste (hereinafter referred to as a "regulated unit"). Any waste or waste constituent migrating beyond the waste management area under §18.1b) is assumed to originate from a regulated unit unless the Administrative Authority finds that such waste or waste constituent originated from another source.
- b) Except as provided in §§1.3, 13.2h) and 16.2h), the owner or operator is subject to all groundwater monitoring regulations.
- c) The Administrative Authority may consider waiving or altering groundwater monitoring requirements as specified in §18.9 if geological and hydrological information establishes that subsurface migration of hazardous waste from the facility will not create a threat to human health or the environment for:
- 1) Waste piles pursuant to §§13.1c), 13.1d), and 13.4;
 - 2) The treatment zone of a land treatment unit that does not contain levels of hazardous constituents that are above background levels of those constituents by an amount that is statistically significant, and if an unsaturated zone monitoring program meeting the requirements of §15.8 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 can only relieve an owner or operator of responsibility to meet the requirements of this Chapter during the post-closure care period; or
 - 3) A regulated unit, provided the Administrative Authority finds, based on the facilities demonstration that there is no potential for migration of any hazardous constituents into the groundwater or surface water during the active life of the regulated unit or at any future time. The demonstration must be certified by an independent qualified geologist or geotechnical engineer. In order to provide an adequate margin of safety in the prediction of potential migration of any hazardous constituent, the owner or operator must base any

predictions made under this section on assumptions that maximize the rate of liquid migration.

- d) The regulations under this Chapter apply during the active life of the regulated unit (including the closure period). After closure of the regulated unit, the regulations in this subpart:
 - 1) Do not apply if all waste, waste residues, contaminated containment system components, and contaminated subsoils are removed or decontaminated at closure;
 - 2) Apply during the post-closure care period under §18.10 if the owner or operator is conducting a detection monitoring program under §18.9; or
 - 3) Apply during the compliance period under §18.7 if the owner or operator is conducting a compliance monitoring program under §18.10 or a corrective action program under §18.11.

18.2 Required programs

- a) Owners and operators subject to this Chapter must conduct a monitoring and response program as follows:
 - 1) Whenever hazardous constituents under §18.4 from a regulated unit are detected at the compliance point under §18.6, the owner or operator must institute a compliance monitoring program under §18.10;
 - 2) Whenever the ground-water protection standard under §18.3 is exceeded, the owner or operator must institute a corrective action program under §18.11;
 - 3) Whenever hazardous constituents under §18.4 from a regulated unit exceed concentration limits under §18.5 in groundwater between the compliance point under §18.6 and the down gradient facility property boundary, the owner or operator must institute a corrective action program under §18.11; or
 - 4) In all other cases, the owner or operator must institute a detection monitoring program under §18.9.
- b) The Administrative Authority will specify in the facility permit the specific elements of the monitoring and response program. The Administrative Authority may include one or more of the programs identified in §18.2a) in the facility permit as may be necessary to protect human health and the environment. The Administrative Authority will specify the circumstances under which each of the programs will be required. In deciding whether to require the owner or operator to be prepared to institute a particular program, the Administrative Authority will consider the potential adverse effects on human health and the environment that might occur before final administrative action on a permit modification application to incorporate such a program could be taken.

18.3 Groundwater protection standard

- a) The owner or operator must comply with conditions specified in the facility permit that are designed to ensure that hazardous constituents (see §18.4) entering the groundwater from a regulated unit, do not exceed the concentration limits (see §18.5) in the uppermost aquifer underlying the waste management area beyond the point of compliance (see §18.6) during the compliance period (see §18.7). The Administrative Authority will establish this groundwater protection standard in the facility permit when hazardous constituents have entered the groundwater from a regulated unit.
- b) The groundwater monitoring system shall consist of necessary wells, at least one hydraulically upgradient, to monitor groundwater moving toward the facility, and all the necessary number of wells downgradient to monitor groundwater leaving the facility. The wells shall be located to intercept contamination at the earliest possible occurrence. Well locations and completion depths must be selected to assure that all probable contaminant flow-paths are monitored. The wells shall be cased, and the casings shall be adequately sealed so that contaminants cannot be introduced from the surface or from one aquifer to another within the well bore, and so that only one water bearing sand is sampled per well. The entire groundwater monitoring system must be approved by the Administrative Authority.
- c) The owner or operator of the facility shall develop and adhere to a ground water sampling and analysis plan, and shall immediately advise the Department when significant changes in ground water quality are determined and verified.
- d) Leachate
 - 1) The leachate monitoring system shall contain a method and device to secure samples, and determine leakage at two locations in each unit where the system is required as follows:

At the low point inside the barrier (liner) encased in sand, or other porous material, ensuring that leachate from all contents will percolate to the low point. Provision for pumping out all leachate which gathers inside this barrier shall be made; and

At a low point under the barrier (liner) and encased in a porous layer over a dense (at least three feet of clay at 1×10^{-7} cm/sec) underlayment, or natural soil, to verify the integrity of the liner.
 - 2) The system shall permit sampling from an accessible surface location.
 - 3) An equivalent system acceptable to the Administrative Authority may be installed in existing facilities.
- e) Air -- Installed, or available portable air monitoring devices shall be located at all sites involving: incineration, landfill, or treatment

facilities. An installed air monitoring system (triangular grid) with continuous recording shall be installed at all commercial sites.

- f) Sampling -- Samples shall be taken from all required monitoring systems before waste is introduced (for new sites) to provide adequate base-line data. Sampling shall be done quarterly, and complete records shall be maintained at the site for examination by the Administrative Authority.

18.4 Hazardous constituents

- a) The Administrative Authority will specify in the facility permit the hazardous constituents to which the groundwater protection standard of §18.3 applies. Hazardous constituents are constituents identified in Table 1 of Chapter 17 that have been detected in groundwater in the uppermost aquifer underlying a regulated unit, and that are reasonably expected to be in or derived from waste contained in a regulated unit, unless the Administrative Authority has excluded them under §18.4b).
- b) The Administrative Authority will exclude any Table 1, Chapter 17 constituents from the list of hazardous constituents specified in the facility permit if he finds that these constituents are not capable of posing a substantial present or potential hazard to human health or the environment. In deciding whether to grant an exemption, the Administrative Authority will consider the following:

1) Potential adverse effects on groundwater quality, considering:

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

The hydrogeological characteristics of the facility and surrounding land;

The quantity of groundwater and the direction of groundwater flow;

The proximity and withdrawal rates of groundwater users;

The current and future uses of groundwater in the area;

The existing quality of groundwater including other sources of contamination, and their cumulative impact on the groundwater quality;

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

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

The persistence and permanence of the potential adverse effects; and

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

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

The hydrogeological characteristics of the facility and surrounding land;

The quantity and quality of groundwater, and the direction of groundwater flow;

The patterns of rainfall in the region;

The proximity of the regulated unit to surface waters;

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

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

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

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

The persistence and permanence of the potential adverse effects.

- c) In making any determination under §18.4b) of this section about the use of groundwater in the area around the facility, the Administrative Authority will consider any identification of underground sources of drinking water and exempted aquifers identified in the permit application under Chapters 3, 4, and 5.

18.5 Concentration limits

- a) The Administrative Authority will specify in the facility permit concentration limits in the groundwater for hazardous constituents established under §18.4. The concentration of a hazardous constituent:
- 1) Must not exceed the background level of that constituent in the groundwater at the time that limit is specified in the permit;
 - 2) For any of the constituents listed in Table 1 below, must not exceed the respective value given in that Table if the background level of the constituent is below the value given; or
 - 3) Must not exceed an alternative limit established by the Administrative Authority under §18.5b) of this section.

TABLE 1. MAXIMUM CONCENTRATION OF
CONSTITUENTS FOR GROUNDWATER PROTECTION.

Constituent	Maximum concentration ¹
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium	0.05
Lead	0.05
Mercury	0.002
Selenium	0.01
Silver	0.05
Endrin (1,2,3,4,10,10-hexachloro-1,7-epoxy 1,4,4a,5,6,7,8,9a-octahydro-1, 4-endo, endo-5,8-dimethano naphthalene)	0.0002
Lindane (1,2,3,4,5,6-hexachlorocyclohexane, gamma isomer)	0.004
Methoxychlor (1,1,1-Trichloro-2,2-bis) (p-methoxyphenylethane)	0.1
Toxaphene (C ₁₀ H ₁₀ Cl ₈ , Technical chlorinated camphene, 67-69 percent chlorine)	0.005
2,4-D (2,4-Dichlorophenoxyacetic acid)	0.1
2,4,5-TP Silvex (2,4,5-Trichlorophenoxypropionic acid)	0.01

¹Milligrams per liter.

- b) The Administrative Authority will establish an alternate concentration limit for a hazardous constituent if he finds that the constituent will not pose a substantial present or potential hazard to human health or the environment as long as the alternate concentration limit is not exceeded. The Administrative Authority will consider the following factors when setting alternate concentration limits:
- 1) Potential adverse effects on groundwater quality, considering the information specified in §18.4b)1); and
 - 2) Potential adverse effects on hydraulically-connected surface water quality, considering the information specified in §18.4b)2).
- c) In making any determination under §18.5b) about the use of groundwater in the area around the facility, the Administrative Authority will consider any identification of underground sources of drinking water and exempted aquifers identified in the permit application under Chapter 3.

18.6 Point of compliance

- a) The Administrative Authority will specify in the facility permit the point of compliance at which the groundwater protection standard of

§18.3a) applies and at which monitoring must be conducted. The point of compliance is a vertical surface located at the hydraulically down gradient limit of the waste management area or the delineated zone of contamination that extends down into the uppermost aquifer underlying the regulated units or the delineated zone of contamination.

- b) The waste management area is the limit projected in the horizontal plane of the area on which waste will be placed during the active life of a regulated unit.
 - 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.
 - 2) If the facility contains more than one regulated unit, the waste management area is described by an imaginary line circumscribing the several regulated units.

18.7 Compliance period

- a) The Administrative Authority will specify in the facility permit the compliance period during which the groundwater protection standard of §18.3 applies. The compliance period is the number of years equal to the active life of the waste management area (including any waste management activity prior to permitting, and the closure period.)
- b) The compliance period begins when the owner or operator initiates a compliance monitoring program meeting the requirements of §18.10.
- c) If the owner or operator is engaged in a corrective action program at the end of the compliance period specified in §18.7a). of this section, the compliance period is extended until the owner or operator can demonstrate that the groundwater protection standard of §18.3 has not been exceeded for a period of three consecutive years.

18.8 General groundwater monitoring requirements -- The owner or operator must comply with the following requirements for any ground-water monitoring program developed to satisfy §§18.9, 18.10, or 18.11:

- a) The groundwater monitoring system must consist of a sufficient number of wells, installed at appropriate locations and depths, to yield groundwater samples from the uppermost aquifer that:
 - 1) Represent the quality of groundwater that has not been affected by leakage from a regulated unit; and
 - 2) Represent the quality of groundwater that would be affected by leakage from the regulated unit.
- b) If a facility contains more than one regulated unit, separate groundwater monitoring systems are not required for each regulated unit, if provisions for sampling the groundwater in the uppermost aquifer will enable

detection and measurement at the compliance point for hazardous constituents for the regulated units.

- c) All monitoring wells must be cased in a manner that maintains the integrity of the monitoring-well bore hole. This casing must be screened or perforated, and packed with gravel or sand, where necessary, to enable collection of groundwater samples. The annular space (i.e., the space between the bore hole and well casing) above the sampling depth must be sealed to prevent contamination of samples and the ground water.
- d) 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:
 - 1) Sample collection;
 - 2) Sample preservation and shipment;
 - 3) Analytical procedures; and
 - 4) Chain of custody control.
- e) 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.
- f) The groundwater monitoring program must include a determination of the groundwater surface elevation each time groundwater is sampled.
- g) Where appropriate, the groundwater monitoring program must establish background groundwater quality for each of the monitoring parameters or constituents specified in the permit.
 - 1) In the detection monitoring program under §18.9, background groundwater quality for a monitoring parameter or constituent must be based on data from quarterly sampling of wells upgradient from the waste management area for one year.
 - 2) In the compliance monitoring program under §18.10, background groundwater quality for a hazardous constituent must be based on data from upgradient wells that:

Is available before the permit is issued;

Accounts for measurement errors in sampling and analysis; and

Accounts, to the extent feasible, for seasonal fluctuations in background groundwater quality, if such fluctuations are expected to affect the concentration of the hazardous constituent.

- 3) Upon approval of the Administrative Authority, background quality may be based on sampling of wells that are not upgradient from the waste management area where:

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

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

- 4) In developing the data base used to determine a background value for each parameter or constituent, the owner or operator must take a minimum of one sample from each well and a minimum of four samples from the entire system used to determine background groundwater quality each time the system is sampled.
- h) The owner or operator must use the following statistical procedure in determining whether background values or concentration limits have been exceeded:
- 1) If, in a detection monitoring program, the level of a constituent at the compliance point is to be compared to the constituent's background value and that background value has a sample coefficient of variation less than 1.00:

The owner or operator must take at least four portions from a sample at each well at the compliance point and determine whether the difference between the mean of the constituent at each well (using all portions taken) and the background value for the constituent is significant at the 0.05 level using the Cochran's Approximation to the Behrens-Fisher Student's t-test as described in Table 2 of this Chapter. If the test indicates that the difference is significant, the owner or operator must repeat the same procedure (with at least the same number of portions as used in the first test) with a fresh sample from the monitoring well. If this second round of analyses indicates that the difference is significant, the owner or operator must conclude that a statistically significant change has occurred; or

The owner or operator may use an equivalent statistical procedure for determining whether a statistically significant change has occurred. The Administrative Authority will specify such a procedure in the facility 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 §18.8h)1) of this section.

TABLE 2

Cochran's Approximation to the Behrens-Fisher Students' t-test

Using all the available background data (n readings), calculate the background mean ($\bar{X}_B$) and background variance (S_B^2). For the single monitoring well under investigation (n_m reading), calculate the monitoring mean ($\bar{X}_m$) and monitoring variance (S_m^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_c). The t^* value is compared to the t_c value and a conclusion reached as to whether there has been a statistically significant change in any indicator parameter.

The t-statistic for all parameters except pH and similar monitoring parameters is:

$$t^* = \frac{\bar{X}_m - \bar{X}_B}{\sqrt{\frac{S_m^2}{n_m} + \frac{S_B^2}{n_B}}}$$

If the value of this t-statistic is negative then there is no significant difference between the monitoring data and background data. It should be noted that significantly small negative values may be indicative of a failure of the assumption made for test validity or errors have been made in collecting the background data.

The t-statistic (t_c) against which t^* will be compared, necessitates finding t_B and t_m from standard (one-tailed) tables where.

(continued)

TABLE 2. (continued)

t_B = t-tables with $(n_B - 1)$ degrees of freedom, at the 0.05 level of significance.

t_m = t-tables with $(n_m - 1)$ degrees of freedom, at the 0.05 level of significance.

Finally, the special weightings W_B and W_m are defined as follows:

$$W_B = \frac{S_B^2}{n_B} \text{ and } W_m = \frac{S_m^2}{n_m}$$

and so the comparison t-statistic is:

$$t_c = \frac{W_B t_B + W_m t_m}{W_B + W_m}$$

The t-statistic (t^*) is now compared with the comparison t-statistic (t_c) using the following decision-rule:

If t^* is equal to or larger than t_c then conclude that there most likely has been a significant increase in this specific parameter.

If t^* is less than t_c then conclude that most likely there has not been a change in this specific parameter.

The t-statistic for testing pH and similar monitoring parameters is constructed in the same manner as previously described except the negative sign (if any) is discarded and the caveat concerning the negative value is ignored. The standard (two-tailed) tables are used in the construction t_c for pH and similar monitoring parameters.

If t^* is equal to or larger than t_c then conclude that there most likely has been a significant increase (if the initial t^* had been negative, this would imply a significant decrease). If t^* is less than t_c then conclude that there most likely has been no change.

A further discussion of the test may be found in Statistical Methods (6th Edition, Section 4.14) by G. W. Snedecor and W. G. Cochran, or Principles and Procedures of Statistics (1st Edition, Section 5.8) by R. G. D. Steel and J. H. Torrie.

(continued)

TABLE 2. (continued)

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" (1947, R. A. Fisher and F. Yates).

- 2) In all other situations in a detection monitoring program and in a compliance monitoring program, the owner or operator must use a statistical procedure providing reasonable confidence that the migration of hazardous constituents from a regulated unit into and through the aquifer will be indicated. The Administrative Authority will specify a statistical procedure in the facility permit that he finds:

Is appropriate for the distribution of the data used to establish background values or concentration limits; and

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.

- i) The groundwater monitoring program must insure that the permittee maintains records from all required groundwater monitoring wells and associated groundwater surface elevations, for the active life of the facility including the operating, closure, and post-closure care periods.
- 18.9 Detection monitoring program -- An owner or operator required to establish a detection monitoring program under this subpart must, at a minimum, discharge the following responsibilities:
- a) The owner or operator must monitor for indicator parameters (e.g., specific conductance, total organic carbon, or total organic halogen), waste constituents, or reaction products that provide a reliable indication of the presence of hazardous constituents in groundwater. The Administrative Authority will specify the parameters or constituents to be monitored in the facility permit, after considering the following factors:
 - 1) The types, quantities, and concentrations of constituents in wastes managed at the regulated unit;
 - 2) The mobility, stability, and persistence of waste constituents or their reaction products in the unsaturated zone beneath the waste management area;
 - 3) The detectability of indicator parameters, waste constituents, and reaction products in groundwater; and
 - 4) The concentrations or values, and coefficients of variation of proposed monitoring parameters or constituents in the groundwater background.
 - b) The owner or operator must install a groundwater monitoring system at the compliance point as specified under §18.6. The groundwater monitoring system must comply with §§18.8a)2), 18.8b), and 18.8c);
 - c) The owner or operator must establish a background value for each monitoring parameter or constituent specified in the permit pursuant to §18.9a) of this section. The permit will specify the background values for each parameter or specify the procedures to be used to calculate the background values.
 - 1) The owner or operator must comply with §18.8g) in developing the data base used to determine background values.
 - 2) The owner or operator must express background values in a form necessary for the determination of statistically significant increases under §18.8h).

- 3) In taking samples used in the determination of background values, the owner or operator must use a groundwater monitoring system that complies with §§18.8a)1), 18.8b), and 18.8c).
- d) The owner or operator must determine groundwater quality at each monitoring well at the compliance point at least semi-annually during the active life of a regulated unit (including the closure period) and the post-closure care period. The owner or operator must express the groundwater quality at each monitoring well in a form necessary for the determination of statistically significant increases under §18.8h). The Administrative Authority may require the owner or operator to run specific indicator parameters on a more frequent schedule;
- e) The owner or operator must determine the groundwater flow rate and direction in the uppermost aquifer at least annually;
- f) The owner or operator must use procedures and methods for sampling and analysis that meet the requirements of §§18.8d) and 18.8e);
- g) The owner or operator must determine whether there is a statistically significant increase over background values for any parameter or constituent specified in the permit pursuant to 18.9a) of this section each time he determines groundwater quality at the compliance point under §18.9d).
 - 1) In determining whether a statistically significant increase has occurred, the owner or operator must compare the groundwater quality at each monitoring well, at the compliance point for each parameter or constituent, to the background value for that parameter or constituent, according to the statistical procedure specified in the permit under §18.8h).
 - 2) The owner or operator must determine whether there has been a statistically significant increase at each monitoring well, at the compliance point, within a reasonable time period after completion of sampling. The administrative authority will specify that time period in the facility permit, after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of groundwater samples.
- h) If the owner or operator determines, pursuant to §18.9g), that there is a statistically significant increase for parameters or constituents specified pursuant to §18.9a) at any monitoring well at the compliance point, he must:
 - 1) Notify the Administrative Authority of this finding in writing within seven days. The notification must indicate what parameters or constituents have shown statistically significant increases;
 - 2) Immediately sample the groundwater in all monitoring wells and determine the concentration of all constituents identified in Table 1 of Chapter 17 that are present in groundwater;

- 3) Establish a background value for each constituent that has been found at the compliance point under §18.9h)3), as follows:

The owner or operator must comply with §18.8g) in developing the data base used to determine background values;

The owner or operator must express background values in a form necessary for the determination of statistically significant increases under §18.8h); and

In taking samples used in the determination of background values, the owner or operator must use a groundwater monitoring system that complies with §§18.8a)1), 18.8b), and 18.8c);

- 4) Within ninety days, submit, to the Administrative Authority, an application for a permit modification to establish a compliance monitoring program meeting the requirements of §18.10. The application must include the following information:

An identification of the concentration of any constituent in Table 1 in Chapter 17, found in the groundwater at each monitoring well at the compliance point;

Any proposed changes to the groundwater monitoring system at the facility necessary to meet the requirements of §18.10;

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 §18.10; and

For each hazardous constituent found at the compliance point, a proposed concentration limit under §§18.5a)1), 18.5a)2), or a notice of intent to seek a variance under §18.5b); and

- 5) Within 180 days, submit to the Administrative Authority:

All data necessary to justify any variance sought under §18.5b) and

An engineering feasibility plan for a corrective action program necessary to meet the requirements of §18.5b), unless:

All hazardous constituents identified under §18.9h)2) are listed in Table 1 of §18.5 and their concentrations do not exceed the respective values given in that Table; or

The owner or operator has sought a variance under §18.5b) for every hazardous constituent identified under §18.9h)2).

- i) If the owner or operator determines, pursuant to §18.9g), that there is a statistically significant increase in the parameters or constituents specified pursuant to §18.9a), at any monitoring well at the compliance

point, 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. While the owner or operator may make a demonstration under this Chapter in addition to, or in lieu of, submitting a permit modification application under §18.9h)4), he is not relieved of the requirement to submit a permit modification application within the time specified in §18.9h)4) unless the demonstration made under this Chapter successfully shows that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation. In making a demonstration under this Chapter, the owner or operator must:

- 1) Notify the Administrative Authority in writing within seven days of determining a statistically significant increase at the compliance point that he intends to make a demonstration under this Chapter;
 - 2) Within ninety days, submit a report to the Administrative Authority which demonstrates that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation;
 - 3) Within ninety days, submit to the Administrative Authority an application for a permit modification to make any appropriate changes to the detection monitoring program at the facility; and
 - 4) Continue to monitor in accordance with the detection monitoring program established under this Chapter.
- j) If the owner or operator determines that the detection monitoring program no longer satisfies the requirements of this Chapter, he must, within ninety days, submit an application for a permit modification to make any appropriate changes to the program; and
- k) The owner or operator must assure that monitoring and corrective action measures necessary to achieve compliance with the groundwater protection standard under §18.3 are taken during the term of the permit.

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

- a) The owner or operator must monitor the groundwater to determine whether regulated units are in compliance with the groundwater protection standard under §18.3. The Administrative Authority will specify the groundwater protection standard in the facility permit, including:
- 1) A list of the hazardous constituents identified under §18.4;
 - 2) Concentration limits under §18.5 for each of those hazardous constituents;

- 3) The compliance point under §18.6; and
 - 4) The compliance period under §18.7.
- b) The owner or operator must install a groundwater monitoring system at the compliance point as specified under §18.6. The groundwater monitoring system must comply with §§18.8a)2), 18.8b), and 18.8c);
- c) Where a concentration limit established under §18.5 is based on background groundwater quality, the Administrative Authority will specify the concentration limit in the permit as follows:
- 1) If there is a high temporal correlation between upgradient and compliance point concentrations of the hazardous constituents, the owner or operator may establish the concentration limit through sampling at upgradient wells each time groundwater is sampled at the compliance point. The Administrative Authority will specify the procedures used for determining the concentration limit in this manner in the permit. In all other cases, the concentration limit will be the mean of the pooled data on the concentration of the hazardous constituent; or
 - 2) If a hazardous constituent is identified in Table 1 under §18.5 and the difference between the respective concentration limit in Table 1 and the background value of that constituent under §18.8g) is not statistically significant, the owner or operator must use the background value of the constituent as the concentration limit. In determining whether this difference is statistically significant, the owner or operator must use a statistical procedure providing reasonable confidence that a real difference will be indicated. The statistical procedure must:

Be appropriate for the distribution of the data used to establish background values; and

Provide a reasonable balance between the probability of falsely identifying a significant difference and the probability of failing to identify a significant difference.
- 3) The owner or operator must:
- Comply with §18.8g) in developing the data base used to determine background values;
- Express background values in a form necessary for the determination of statistically significant increases under §18.8h); and
- Use a groundwater monitoring system that complies with §§18.8a)1), 18.8b), and 18.8c).
- d) The owner or operator must determine the concentration of hazardous constituents in groundwater at each monitoring well at the compliance point at least quarterly during the compliance period. The owner or

operator must express the concentration at each monitoring well in a form necessary for the determination of statistically significant increases under §18.8h);

- e) The owner or operator must determine the groundwater flow rate and direction in the uppermost aquifer at least annually;
- f) The owner or operator must analyze samples from all monitoring wells at the compliance point for all constituents in Table 1 of Chapter 17 at least annually to determine whether additional hazardous constituents are present in the uppermost aquifer. If the owner or operator finds Table 1 of Chapter 17 constituents in the groundwater that are not identified in the permit as hazardous constituents, the owner or operator must report the concentrations of these additional constituents to the Administrative Authority within seven days after completion of the analysis;
- g) The owner or operator must use procedures and methods for sampling and analysis that meet the requirements of §§18.8d) and 18.8e);
- h) The owner or operator must determine whether there is a statistically significant increase over the concentration limits for any hazardous constituents specified in the permit pursuant to §18.10a) of this Chapter each time he determines the concentration of hazardous constituents in groundwater at the compliance point.
 - 1) In determining whether a statistically significant increase has occurred, the owner or operator must compare the groundwater quality at each monitoring well at the compliance point for each hazardous constituent to the concentration limit for that constituent according to the statistical procedures specified in the permit under §18.8h).
 - 2) The owner or operator must determine whether there has been a statistically significant increase at each monitoring well at the compliance point, within a reasonable time period after completion of sampling. The Administrative Authority will specify that time period in the facility permit, after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of groundwater samples.
- i) If the owner or operator determines, pursuant to §18.10h), that the groundwater protection standard is being exceeded at any monitoring well at the point of compliance, he must:
 - 1) Notify the Administrative Authority of this finding in writing within seven days. The notification must indicate what concentration limits have been exceeded; and
 - 2) Submit, to the Administrative Authority, an application for a permit modification to establish a corrective action program meeting the requirements of §18.11 within 180 days, or within ninety days if an engineering feasibility study has been previously submitted to the Administrative Authority under §18.9h)5). The application must at a minimum include the following information:

A detailed description of corrective actions that will achieve compliance with the groundwater protection standard specified in the permit under §18.10a); and

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 compliance monitoring program developed to meet the requirements of this section.

- j) If the owner or operator determines, pursuant to §18.10h), that the groundwater protection standard is 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 an error in sampling, analysis or evaluation. While the owner or operator may make a demonstration under this paragraph in addition to, or in lieu of, submitting a permit modification application under §18.10i)2) of this section, he is not relieved of the requirement to submit a permit modification application within the time specified in §18.10i)2) of this section unless the demonstration made under this paragraph successfully shows that a source other than a regulated unit caused the increase or that the increase resulted from an error in sampling, analysis or evaluation. In making a demonstration under this paragraph, the owner or operator must:
- 1) Notify the Administrative Authority in writing within seven days that he intends to make a demonstration under this paragraph;
 - 2) Within ninety days, submit a report to the Administrative Authority 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;
 - 3) Within ninety days, submit to the Administrative Authority an application for a permit modification to make any appropriate changes to the compliance monitoring program at the facility; and
 - 4) Continue to monitor in accord with the compliance monitoring program established under this Chapter.
- k) If the owner or operator determines that the compliance monitoring program no longer satisfies the requirements of this section, he must, within ninety days, submit an application for a permit modification to make any appropriate changes to the program; and
- 1) The owner or operator must assure that monitoring and corrective action measures necessary to achieve compliance with the groundwater protection standard under §18.3 are taken during the term of the permit.

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

- a) The owner or operator must take corrective action to ensure that regulated units are in compliance with the groundwater protection standard under §18.3. The Administrative Authority will specify the groundwater protection standard in the facility permit, including:
 - 1) A list of the hazardous constituents identified under §18.4;
 - 2) Concentration limits under §18.5 for each of those hazardous constituents;
 - 3) The compliance point under §18.6; and
 - 4) The compliance period under §18.7.
- b) The owner or operator must implement a corrective action program that prevents hazardous constituents from exceeding their respective concentration limits at the compliance point by removing the hazardous waste constituents or treating them in place. The permit will specify the specific measures that will be taken;
- c) The owner or operator must begin corrective action within a reasonable time period after the groundwater protection standard is exceeded. The Administrative Authority will specify that time period in the facility permit. If a facility permit includes a corrective action program in addition to a compliance monitoring program, the permit will specify when the corrective action will begin and such a requirement will operate in lieu of §18.10i)2);
- d) 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 compliance monitoring program under §18.10 and must be as effective as that program in determining compliance with the groundwater protection standard under §18.3 and in determining the success of a corrective action program under §18.11e), where appropriate;
- e) In addition to the other requirements of this section, the owner or operator must conduct a corrective action program to remove or treat in place any hazardous constituents under §18.4 that exceed concentration limits under §18.5 in ground water between the compliance point under §18.6 and the down gradient facility property boundary. The permit will specify the measures to be taken.
 - 1) Corrective action measures under this paragraph must be initiated and completed within a reasonable period of time considering the extent of contamination.
 - 2) Corrective action measures under this paragraph may be terminated once the concentration of hazardous constituents under §18.4 is reduced to levels below their respective concentration limits under §18.5.

- f) The owner or operator must continue corrective action measures during the compliance period to the extent necessary to ensure that the groundwater protection standard is not exceeded. If the owner or operator is conducting corrective action at the end of the compliance period, he must continue that corrective action for as long as necessary to achieve compliance with the groundwater protection standard. The owner or operator may terminate corrective action measures taken beyond the period equal to the active life of the waste management area (including the closure period) if he can demonstrate, based on data from the groundwater monitoring program under §18.11d), that the groundwater protection standard of §18.3 has not been exceeded for a period of three consecutive years;
- g) The owner or operator must report in writing to the Administrative Authority on the effectiveness of the corrective action program. The owner or operator must submit these reports semi-annually; and
- h) If the owner or operator determines that the corrective action program no longer satisfies the requirements of this section, he must, within ninety days, submit an application for a permit modification to make any appropriate changes to the program.

18.12 Monitoring well abandonment and sealing of bore holes -- An owner or operator shall provide for the sealing of any vertical migration path resulting from exploratory boring and/or monitoring programs.

- a) Any boring made in evaluating a site, monitoring, or other purpose related to the hazardous waste site shall be completely filled with cement-bentonite, or other equivalent technology approved by the Administrative Authority. The hole shall be left open only as necessary to obtain core samples, water samples and establish the initial water level. If subsequent samples or water level readings are to be taken, the hole shall be completed as a well with suitable casing and sealing of the annulus between the hole and the casing.
- b) When a monitoring well is to be abandoned, the owner or operator shall obtain approval for such abandonment. A request shall be made to the Administrative Authority, including the following information:
 - 1) Name and address of the facility;
 - 2) Well identification and exact location;
 - 3) Well construction data, including:
 - Well depth and intermediate stratification;
 - Screen length and material;
 - Casing size and material;
 - Sealing of the annulus; and

Other pertinent data.

- 4) Reason for abandonment; and
- 5) Proposed abandonment method, including sealing method and material proposed.
- c) The Administrative Authority may accept the proposal or require modification as necessary to protect groundwater.
- d) For any monitoring well which goes through or into a recognized potable water aquifer, and any well which the Administrative Authority feels could directly impact such aquifer, the owner or operator shall additionally complete and submit an abandonment report as required by the Water Resources Section of the Office of Public Works in the Department of Transportation and Development.

CHAPTER 19
CLOSURE AND POST-CLOSURE

19.1 Applicability

- a) Closure and post-closure procedures ensure protection of the public and ecology against leakage of hazardous wastes to the environment from closed facilities which formerly stored, treated, and/or disposed of such wastes.
- b) Except as §1.3d) provides otherwise, §§19.2 and 19.9 (which concern closure) apply to all hazardous waste facilities in operation or under construction as of the effective date of the LHWR and to all hazardous waste facilities permitted under the LHWR, as applicable.
- c) §§19.8, 19.9, 19.10, and 19.11 (post-closure care) apply to the owners and operators of:
 - 1) All hazardous waste disposal facilities; and
 - 2) Piles, surface impoundments, or any facility from which the owner or operator intends to remove waste at closure, to the extent that these sections are made applicable to such facilities in §§13.8 and 16.6.

19.2 Notification of intention to close a facility -- At least 180 days prior to closure, the operator must notify the Administrative Authority of intention to close and supply the following information:

- a) Date of planned closure;
- b) Requested changes, if any, in the closure plan submitted with the permit application, which take advantage of new technology, unforeseen situations, and other requests which improve the safety of the closed facility;
- c) Closure schedule and estimated costs of each phase of the closure plan; and
- d) Request for release of closure funds in amounts and times as required by the closure schedules.

Sub-Chapter I
Closure Requirements

19.3 Closure procedures

- a) If closure methods are unchanged from the plan approved with the permit, the Administrative Authority will acknowledge receipt of the notification to close and prepare appropriate documents which will be executed upon completion and acceptance of each phase of the closure plan so that funds can be released.
- b) If the request is made to change the closure plan, the operator will submit revisions to the plan, supported by necessary scientific and engineering data to permit evaluation by the Department, and the procedures established in Permit Process will be followed in evaluating and approving the requested changes.

19.4 Closure performance standards -- Pursuant to LHWR §19.5 the owner or operator must close his facility in a manner that:

- a) Minimizes the need for further maintenance; and
- b) Controls, minimizes, or eliminates, to the extent necessary to prevent threats to human health and the environment, post-closure escape of hazardous waste, hazardous waste constituents, leachate, contaminated rainfall, or waste decomposition products to the groundwater, surface waters, or to the atmosphere.

19.5 Closure financial responsibility

- a) The operator shall submit, with the permit application, a closure plan which provides the estimated cost of closure, and post-closure monitoring including long-term monitoring devices, and the number of years of estimated operation before closure, and which is designed to minimize the need for future maintenance and to insure against leakage or escape of hazardous waste.
- b) The operator shall create a "Closure Fund" under the requirements in Chapters 19 and 20.

19.6 Closure plan

- a) Closure plan requirements -- The owner or operator of a hazardous waste management facility must have a written closure plan. The plan must be submitted with the permit application, in accordance with §4.9m) and approved by the Administrative Authority as part of the permit issuance proceedings set forth in Chapter 3. In accordance with §3.5, the approved closure plan will become a condition of any hazardous waste permit. The Administrative Authority decision must assure that that approved closure plan is consistent with §§19.4, 19.7, 19.8, 19.9, and the applicable requirements of §§11.6, 12.9, 13.8, 14.11, 15.10, 16.6, and 17.11. A copy of the approved plan and all revisions to the plan must be kept at the facility until closure is completed and certified in accordance with §19.9. The plan must identify steps necessary to completely or partially close the facility at any point during its intended operating life. The closure plan must include the following:

- 1) A description of how and when the facility will be partially closed, if applicable, and finally closed. The description must identify the maximum extent of the operation which will be used at any time during the life of the facility and how the requirements of §§19.4, 19.7, 19.8, and 19.9, and the application closure requirements of §§11.6, 12.9, 13.8, 14.11, 15.10, 16.6, and 17.11, will be met;
 - 2) An estimate of the maximum inventory of wastes in storage and in treatment at any time during the life of the facility. (Any change in this estimate can be a minor modification, see §3.11);
 - 3) A description of the steps needed to decontaminate facility equipment during closure; and
 - 4) An estimate of the expected year of closure and a schedule for final closure. The schedule must include, at a minimum, the total time required to close the facility and the time required for intervening closure activities which will allow tracking of the progress of closure. (For example, in the case of a landfill, estimates of the time required to treat and dispose of all waste inventory and of the time required to place a final cover must be included.) Any change in this estimate can be a minor modification, see §3.11.
- b) Amendments to the closure plan -- The owner or operator may amend his closure plan at any time during the operating life of the facility. The owner or operator must amend the plan whenever changes in operating plans or facility design affect the closure plan, or whenever there is a change in the expected year of closure. When the owner or operator requests a permit modification to authorize a change in operating plans or facility design, he must request a modification of the closure plan at the same time. If a permit modification is not needed to authorize the change in operating plans or facility design, the request for modification of the closure plan must be made within sixty days after the change in plans or design occurs.
- c) Date closure begins -- The date when the owner or operator "expects to begin closure" should be within thirty days after the date on which he expects to receive the final volume of wastes. If the facility's permit is terminated, or if the facility is otherwise ordered by judicial decree or compliance order, to cease receiving wastes or to close, then the requirement of §19.2 above does not apply. However, the owner or operator must close the facility in accordance with the deadlines established in §19.7.

19.7 Time allowed for closure

- a) Within ninety days after receiving the final volume of hazardous wastes, the owner or operator must treat, remove from the site, or dispose of on-site, all hazardous wastes in accordance with the approved closure plan. The Administrative Authority may approve a longer period if the owner or operator demonstrates that:

- 1) The activities required to comply with this paragraph will, of necessity, take longer than ninety days to complete; or the facility has the capacity to receive additional wastes; or
 - 2) There is a reasonable likelihood that a person other than the owner or operator will recommence operation of the site, as provided in §3.11; and
 - 3) Closure of the facility would be incompatible with continued operation of the site; and
 - 4) The owner or operator has taken and will continue to take all steps to prevent threats to human health and the environment.
- b) The owner or operator must complete closure activities in accordance with the approved closure plan and within 180 days after receiving the final volume of wastes. The Administrative Authority may approve a longer closure period if the owner or operator demonstrates that:
- 1) The closure activities will, of necessity, take longer than 180 days to complete; or the facility has the capacity to receive additional wastes; or
 - 2) There is reasonable likelihood that a person other than the owner or operator will recommence operation of the site, as provided in §3.11; and
 - 3) Closure of the facility would be incompatible with continued operation of the site; and
 - 4) The owner or operator has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed, but inactive facility.
- c) Any extension of the ninety- or 180-day period in this section may be made as a minor modification. If operation of the site is recommenced, the Administrative Authority may defer completion of closure activities until the new operation is terminated.
- 19.8 Disposal or decontamination of equipment -- When closure is completed, all facility equipment and structures must have been properly disposed of, or decontaminated, by removing all hazardous waste and residues.
- 19.9 Certification of closure -- When closure is completed, the owner or operator must submit to the Administrative Authority certification by the owner or operator and by an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan.

Sub-Chapter II
Post-Closure Requirements

19.10 Post-closure procedures

- a) Any proposed transfer of ownership of the property shall be reported to the Administrative Authority at least sixty days prior to execution of such sale.
- b) The Administrative Authority must approve any new owner. Criteria for approval includes agreement to land use restrictions necessary to protect public health and financial responsibility covering liability due to change in land use.
- c) The Administrative Authority will conduct an annual evaluation of the site for the period of post-closure.

19.11 Post-closure care and use of property

a) Length of post-closure

- 1) Post-closure care must continue for at least thirty years after the date of completing closure and must consist of at least the following:

Monitoring and reporting in accordance with the requirements of Chapters 13, 14, 15, 16, and 18; and

Maintenance and monitoring of waste containment systems in accordance with the requirements of Chapters 13, 14, 15, 16, and 18.

- 2) Reduction of post-closure care period by the Administrative Authority

During the 180 day period preceding closure (see §19.2) or at any time thereafter, the Administrative Authority may reduce the post-closure care period to less than thirty years if he finds that the reduced period is sufficient to protect human health and the environment (e.g. leachate or groundwater monitoring results, characteristics of the waste, application of advanced technology, or alternative disposal treatment, or re-use techniques indicate that the facility is secure).

- 3) Extension of the post-closure care period by the Administrative Authority.

Prior to the time that the post-closure care period is due to expire, the Administrative Authority may extend the post-closure care period if he finds that the extended period is necessary to protect human health and the environment (e.g. leachate or groundwater monitoring results indicate a potential for migration of waste at levels which may be harmful to human health and the environment) or there is reason to believe waste may become exposed after completion of closure.

- b) The Administrative Authority may require at closure that during part or all of the post-closure period and after the date of completion of closure, continuation of any of the security requirements of the permit when:
 - 1) There is reason to believe waste may become exposed after completion of closure; or
 - 2) Access by the public or domestic livestock may pose a hazard to human health.
- 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 Administrative Authority finds that the disturbance:
 - 1) Is necessary to the proposed use of the property, and will not increase the potential hazard to human health or the environment, i.e., for removal of the hazardous waste under §19.13b); or
 - 2) Is necessary to reduce a threat to human health or the environment.
- d) All post-closure care activities must be in accordance with the provisions of the approved post-closure plan as specified in §19.12.

19.12 Post-closure plan

- a) Post-closure plan requirements -- The owner or operator of a disposal facility must have a written post-closure plan. In addition, certain piles and certain surface impoundments from which the owner or operator intends to remove the wastes at closure are required by §§13.8 and 16.6 to have post-closure plans. The plan must be submitted with a permit application, in accordance with §4.9, and approved by the Administrative Authority as part of the permit issuance proceedings under Chapter 3. In accordance with §3.5, the approved post-closure plan will become a condition of any permit issued. A copy of the approved plan and all revisions to the plan must be kept at the facility until the post-closure care period begins. This plan must identify the activities that will be carried on after closure, the frequency of these activities and must include at least the following:
 - 1) A description of the planned monitoring activities and frequencies at which they will be performed to comply with Chapters 13, 14, 15, 16, and 18, during the post-closure care period;
 - 2) A description of the planned maintenance activities and frequencies at which they will be performed, to ensure:

The integrity of the cap and final cover or other containment systems in accordance with the requirements of §§13.8, 14.11, 15.10, and 16.6, and Chapter 18; and

The function of the facility monitoring equipment in accordance with the requirements of Chapters 13, 14, 15, 16, and 18.

- 3) The name, address, and phone number of the person or office to contact about the disposal facility during the post-closure period.

This person or office must keep an updated post-closure plan during the post-closure period; and

- 4) Proposed procedures for post-closure site security.
- b) Amendments to the post-closure plan -- The owner or operator may amend his post-closure plan at any time during the active life of the disposal facility or during the post-closure care period. The owner or operator must amend his plan anytime changes in operating plans or facility design, or events which occur during the active life of the facility or during the post-closure period, affect his post-closure plan. He must also amend his plan whenever there is a change in the expected year of closure.
- c) When a permit modification is requested during the active life of the facility to authorize a change in operating plans or facility design, modification of the post-closure plan must be requested at the same time (see §3.11). In all other cases, the request for modification of the post-closure plan must be made within sixty days after the change in operating plans or facility design, or the events which affect his post-closure plan occur.

19.13 Notice in deed to property

- a) The owner of the property on which a disposal facility is located must 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:
 - 1) The land has been used to manage hazardous wastes;
 - 2) Its use is restricted under §19.11; and
 - 3) The survey plat and record of the type, location, and quantity of hazardous wastes disposed of within each cell or area of the facility required in §19.14 have been filed with the local zoning authority or the authority with jurisdiction over local land use and with the Administrative Authority.
- b) If at any time the owner or operator, or any subsequent owner of the land upon which a hazardous waste facility was located removes the waste and waste residues, the liner, if any, and all contaminated underlying and surrounding soil, then he may remove the notation on the deed to the facility property or other instrument normally examined during title search, or he may add a notation to the deed or instrument indicating the removal of the waste. On removing the waste and waste residues, the

liner, if any, and the contaminated soil, the owner or operator, unless he can demonstrate that any solid waste removed is not a hazardous waste, becomes a generator of hazardous waste and must manage it in accordance with applicable requirements of the LHWL.

- 19.14 Notice to local land authority -- Within ninety days after closure is completed, the owner or operator of a disposal facility must submit to the local zoning authority or the authority with jurisdiction over local land use, and to the Administrative Authority, a survey plat indicating the location and dimensions of landfill cells or other disposal areas with respect to permanently surveyed benchmarks. This plat must be prepared and certified by a professional land surveyor. The plat filed with the local zoning authority or the authority with jurisdiction over local land use, must contain a note, prominently displayed, which states the owner's or operator's obligation to restrict disturbance of the site as specified in §19.11. In addition, the owner or operator must submit to the local zoning authority or the authority with jurisdiction over local land use and to the Administrative Authority, a record of the type, location and quantity of hazardous wastes disposed of within each cell or area of the facility. For wastes disposed of before these regulations were promulgated, the owner or operator must identify the type, location and quantity of the wastes to the best of his knowledge and in accordance with any records he has kept. Any changes in the type, location, or quantity of hazardous wastes disposed of within each cell or area of the facility that occur after the survey plat and record of wastes have been filed must be reported to the local zoning authority or the authority with jurisdiction over local land use and to the Administrative Authority and with prior approval of the Administrative Authority.

CHAPTER 20
FINANCIAL REQUIREMENTS

20.1 Applicability

- a) The requirements of this Chapter apply to owners and operators of all hazardous waste facilities, except as provided otherwise in this Part.
- b) The requirements of §§20.5 and 20.6 apply only to owners and operators of:
 - 1) Disposal facilities; and
 - 2) Piles and surface impoundments from which the owner or operator intends to remove the wastes at closure, to the extent that these sections are made applicable to such facilities in Chapters 13 and 16.
- c) States and the Federal government are exempt from the requirements of this Chapter.

[Comment: The permit application should include a description of the financial structure of the operating unit including capital structure, principle ownership, and insurance coverage for personal injury and property damage.]

20.2 Definitions of terms as used in this Chapter.

- a) General terms
 - 1) Closure plan means the plan for closure prepared in accordance with the requirements of Chapter 19.
 - 2) Current closure cost estimate means the most recent of the estimates prepared in accordance with §§20.3a) through 20.3c).
 - 3) Current postclosure cost estimate means the most recent of the estimates prepared in accordance with §§20.5a) through 20.5c).
 - 4) Parent corporation means a corporation which directly owns at least 50 percent of the voting stock of the corporation which is the facility owner or operator; the latter corporation is deemed a subsidiary of the parent corporation.
 - 5) Post-closure plan means the plan for the post-closure care prepared in accordance with the requirements of Chapter 19.

- 6) The following terms are used in the specifications for the financial tests for closure, post-closure care, and liability coverage. The definitions are intended to assist in the understanding of these regulations and are not intended to limit the meanings of terms in a way that conflicts with generally accepted accounting practices.

Assets means all existing and all probable future economic benefits obtained or controlled by a particular entity.

Current assets mean cash or other assets, or resources commonly identified as those which are reasonably expected to be realized in cash, or sold, or consumed during the normal operating cycle of the business.

Current liabilities mean obligations whose liquidation is reasonably expected to require the use of existing resources properly classifiable as current assets or the creation of other current liabilities.

Independently audited refers to an audit performed by an independent certified public accountant in accordance with generally accepted auditing standards.

Liabilities mean probable future sacrifices of economic benefits arising from present obligations to transfer assets or provide services to other entities in the future as a result of past transactions or events.

Net working capital means current assets minus current liabilities.

Net worth means total assets minus total liabilities and is equivalent to owner's equity.

Tangible net worth means the tangible assets that remain after deducting liabilities; such assets would not include intangibles such as goodwill and rights to patents or royalties.

- b) Insurance-related terms -- In the liability insurance requirements the terms bodily injury and property damage shall have the meanings given these terms by applicable State law. However, these terms do not include those liabilities which, consistent with standard industry practices, are excluded from coverage in liability policies for bodily injury and property damage. The meanings of other terms used in the liability insurance requirements are to be consistent with their common meanings within the insurance industry. The definitions of several of the terms given below are intended to assist in the understanding of these regulations and are not intended to limit their meaning in a way that conflicts with general insurance industry usage.
- 1) Accidental occurrence means an accident, including continuous or repeated exposure to conditions, which results in bodily injury or property damage neither expected nor intended from the standpoint of the insured.

- 2) Legal defense costs means any expenses that an insurer incurs in defending against claims of third parties brought under the terms and conditions of an insurance policy.
- 3) Nonsudden accidental occurrence means an occurrence which takes place over time and involves continuous or repeated exposure.
- 4) Sudden accidental occurrence means an occurrence which is not continuous or repeated in nature.

Sub-Chapter I Closure Requirements

20.3 Cost estimate for closure

- a) The owner or operator must have a written estimate, in current dollars, of the cost of closing the facility in accordance with the requirements in §§19.2 through 19.7 and applicable closure requirements in §§11.6, 12.9, 13.8, 14.11, 15.10, 16.6, and 17.11. The estimate must equal the cost of closure at the point in the facility's operating life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan. (See §19.5.)
- b) The owner or operator must adjust the closure cost estimate for inflation within 30 days after each anniversary of the date on which the first closure cost estimate was prepared. The adjustment must be made as specified in §§20.3b)1) and 20.3b)2) below, using an inflation factor derived from the annual Implicit Price Deflator for Gross National Product as published by the U.S. Department of Commerce in its Survey of Current Business. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.
 - 1) The first adjustment is made by multiplying the closure cost estimate by the inflation factor. The result is the adjusted closure cost estimate.
 - 2) Subsequent adjustments are made by multiplying the latest adjusted closure cost estimate by the latest inflation factor.
- c) The owner or operator must revise the closure cost estimate whenever a change in the closure plan increases the cost of closure. The revised closure cost estimate must be adjusted for inflation as specified in §20.3b).
- d) The owner or operator must keep, at the facility during the operating life of the facility, the latest closure cost estimate and, when this estimate has been adjusted, the latest adjusted closure cost estimate.

- 20.4 Financial assurance for closure -- An owner or operator of each facility must establish financial assurance for closure of the facility. Under this Part, the owner or operator must choose from the options as specified in §§20.4a)

through 20.4f), which choice the Administrative Authority must find acceptable based on the application and the circumstances.

a) Closure trust fund

- 1) An owner or operator may satisfy the requirements of this Part by establishing a closure trust fund which conforms to the requirements of this Subpart, and submitting an originally signed duplicate of the trust agreement to the Administrative Authority. An owner or operator of a new facility must submit the originally signed duplicate of the trust agreement to the Administrative Authority at least sixty days before the date on which hazardous waste is first received for treatment, storage, or disposal. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.
- 2) The wording of the trust agreement must be identical to the wording specified in §20.10a)1), and the trust agreement must be accompanied by a formal certification of acknowledgment (for example, see §20.10a)2). Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current closure cost estimate covered by the agreement.
- 3) Payments into the trust fund must be made annually by the owner or operator over the term of the initial permit, or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments into the closure trust fund must be made as follows:

For a new facility, the first payment must be made before the initial receipt of hazardous waste for treatment, storage, or disposal. A receipt from the trustee for this payment must be submitted by the owner or operator to the Administrative Authority before this initial receipt of hazardous waste. The first payment must be at least equal to the current closure cost estimate, except as provided in §20.4g), divided by the number of years in the pay-in period. Subsequent payments must be made no later than thirty days after each anniversary date of the first payment. The amount of each subsequent payment must be determined by this formula:

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

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

If an owner or operator has previously established a trust fund pursuant to Federal regulation, and the value of that trust fund is less than the current closure cost estimate when a permit under these regulations is awarded for the facility, then the amount of

the current closure cost estimate still to be paid into the trust fund must be paid in over the pay-in period as defined in §20.4a)3). Payments must continue to be made no later than thirty days after each anniversary date of the first payment made. The amount of each payment must be determined by this formula:

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

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

- 4) The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current closure cost estimate at the time the fund is established. However, he must maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in §20.4a)3).
- 5) If the owner or operator establishes a closure trust fund after having used one or more alternate mechanisms specified in this Part, his first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to specifications of this Subpart.
- 6) After the pay-in period is completed, whenever the current closure cost estimate changes, the owner or operator must compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within sixty days after the change in the cost estimate, must either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current closure cost estimate, or obtain other financial assurance as specified in this section to cover the difference.
- 7) If the value of the trust fund is greater than the total amount of the current closure cost estimate, the owner or operator may submit a written request to the Administrative Authority for release of the amount in excess of the current closure cost estimate.
- 8) If an owner or operator substitutes other financial assurance as specified in this Part for all or part of the trust fund, he may submit a written request to the Administrative Authority for release of the amount in excess of the current closure cost estimate covered by the trust fund.
- 9) Within sixty days after receiving a request from the owner or operator for release of funds as specified in §§20.4a)7) or 20.4a)8) the Administrative Authority will instruct the trustee to release to the owner or operator such funds as the Administrative Authority specifies in writing.

10) After beginning final closure, an owner or operator, or any other person authorized to perform closure may request reimbursement for closure expenditures by submitting itemized bills to the Administrative Authority. Within sixty days after receiving bills for closure activities, the Administrative Authority will determine whether the closure expenditures are in accordance with the closure plan or otherwise justified, and if so, he will instruct the trustee to make reimbursement in such amounts as the Administrative Authority specifies in writing. If the Administrative Authority has reason to believe that the cost of closure will be significantly greater than the value of the trust fund, he may withhold reimbursement for such amounts as he deems prudent until he determines, in accordance with §20.4i), that the owner or operator is no longer required to maintain financial assurance for closure.

11) The Administrative Authority will agree to termination of the trust when:

An owner or operator substitutes alternate financial assurance as specified in this Part; or

The Administrative Authority releases the owner or operator from the requirements of this Part in accordance with §20.4i).

b) Surety bond guaranteeing payment into a closure trust fund

1) An owner or operator may satisfy the requirements of this Part by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Administrative Authority. An owner or operator of a new facility must submit the bond to the Administrative Authority at least sixty days before the date on which hazardous waste is first received for treatment, storage, or disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury, and approved by the Administrative Authority.

2) The wording of the surety bond must be identical to the wording specified in §20.10b).

3) The owner or operator who uses a surety bond to satisfy the requirements of this Part must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Administrative Authority. This standby trust fund must meet the requirements specified in §20.4a) except that:

An originally signed duplicate of the trust agreement must be submitted to the Administrative Authority with the surety bond; and

Until the standby trust fund is funded pursuant to the requirements of this Part, the following are not required by these regulations:

Payments into the trust fund as specified in §20.4a);

Updating of Schedule A of the trust agreement to show current closure cost estimates;

Annual valuations as required by the trust agreement; and

Notices of nonpayment as required by the trust agreement.

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

Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility; or

Fund the standby trust fund in an amount equal to the penal sum within 15 days after an order to begin closure is issued by the Administrative Authority, or court of competent jurisdiction; or

Provide alternate financial assurance as specified in this Part and obtain the Administrative Authority's written approval of the assurance provided, within ninety days after receipt by both the owner or operator and the Administrative Authority of a notice of cancellation of the bond from the surety.

- 5) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.
- 6) The penal sum of the bond must be in an amount at least equal to the current closure cost estimate, except as provided in §20.4g).
- 7) Whenever the current closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within sixty days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Administrative Authority, or obtain other financial assurance as specified in this Part to cover the increase. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate following written approval by the Administrative Authority.
- 8) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator, and to the Administrative Authority. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Administrative Authority, as evidenced by the return receipts.
- 9) The owner or operator may cancel the bond if the Administrative Authority has given prior written consent based on his receipt of evidence of alternate financial assurance as specified in this Part.

c) Surety bond guaranteeing performance of closure

- 1) An owner or operator of a facility which has been issued a standard permit may satisfy the requirements of this Part by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Administrative Authority. An owner or operator of a new facility must submit the bond to the Administrative Authority at least sixty days before the date on which hazardous waste is first received for treatment, storage, or disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury, and approved by the Administrative Authority.
- 2) The wording of the surety bond must be identical to the wording specified in §20.10c).
- 3) The owner or operator who uses a surety bond to satisfy the requirements of this Part must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Administrative Authority. This standby trust must meet the requirements specified in §20.4 except that:

An originally signed duplicate of the trust agreement must be submitted to the Administrative Authority with the surety bond; and

Unless the standby trust fund is funded pursuant to the requirements of this Part, the following are not required by these regulations:

Payments into the trust fund as specified in §20.4a);

Updating of Schedule A of the trust agreement to show current closure cost estimates;

Annual valuations as required by the trust agreement; and

Notices of nonpayment as required by the trust agreement.

- 4) The bond must guarantee that the owner or operator will:

Perform final closure in accordance with the closure plan and other requirements of the permit for the facility whenever required to do so; or

Provide alternate financial assurance as specified in this Part, and obtain the Administrative Authority's written approval of the assurance provided, within ninety days after receipt of both the owner or operator, and the Administrative Authority of a notice of cancellation of the bond from the surety.

- 5) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a determination by the Administrative Authority that the owner or operator has failed to perform final closure in accordance with the closure plan and other permit requirements when required to do so, under the terms of the bond the surety will perform final closure as guaranteed by the bond or will deposit the amount of the penal sum into the standby trust fund.
- 6) The penal sum of the bond must be in an amount at least equal to the current closure cost estimate.
- 7) Whenever the current closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within sixty days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Administrative Authority, or obtain other financial assurance as specified in this Part. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate following written approval by the Administrative Authority.
- 8) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Administrative Authority. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Administrative Authority, as evidenced by the return receipts.
- 9) The owner or operator may cancel the bond if the Administrative Authority has given prior written consent. The Administrative Authority will provide such written consent when:

An owner or operator substitutes alternate financial assurance as specified in this Part; or

The Administrative Authority releases the owner or operator from the requirements of this Part in accordance with §20.4i).

- 10) The surety will not be liable for deficiencies in the performance of closure by the owner or operator after the Administrative Authority releases the owner or operator from the requirements of this Part in accordance with §20.4i).

d) Closure letter of credit

- 1) An owner or operator may satisfy the requirements of this Part by obtaining an irrevocable standby letter of credit which conforms to the requirements of this paragraph and submitting the letter to the Administrative Authority. An owner or operator of a new facility must submit the letter of credit to the Administrative Authority at least sixty days before the date on which hazardous waste is first

received for treatment, storage, or disposal. The letter of credit must be effective before the initial receipt of hazardous waste. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a Federal or State agency.

- 2) The wording of the letter of credit must be identical to the wording specified in §20.10d).
- 3) An owner or operator who uses a letter of credit to satisfy the requirements of this Part must also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Administrative Authority will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Administrative Authority. This standby trust fund must meet the requirements of the trust fund specified in §20.4a), except that:

An originally signed duplicate of the trust agreement must be submitted to the Administrative Authority with the letter of credit; and

Unless the standby trust fund is funded pursuant to the requirements of this Part, the following are not required by these regulations:

Payments into the trust fund as specified in §20.4a);

Updating of Schedule A of the trust agreement to show current closure cost estimates;

Annual valuations as required by the trust agreement; and

Notices of nonpayment as required by the trust agreement.

- 4) The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: the Hazardous Waste Facility Identification Number, name, address, and the amount of funds assured for closure of the facility by the letter of credit.
- 5) The letter of credit must be irrevocable and issued for a period of at least one year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the Administrative Authority by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the Administrative Authority have received the notice, as evidenced by the return receipts.

- 6) The letter of credit must be issued in an amount at least equal to the current closure cost estimate, except as provided in §20.4g).
- 7) Whenever the current closure cost estimate increases to an amount greater than the amount of the credit, the owner or operator, within sixty days after the increase, must either cause the amount of the credit to be increased so that it at least equals the current closure cost estimate and submit evidence of such increase to the Administrative Authority, or obtain other financial assurance as specified in this Part to cover the increase. Whenever the current closure cost estimate decreases, the amount of the credit may be reduced to the amount of the current closure cost estimate following written approval by the Administrative Authority.
- 8) Following a determination by the Administrative Authority that the owner or operator has failed to perform final closure in accordance with the closure plan and other permit requirements when required to do so, the Administrative Authority may draw on the letter of credit.
- 9) If the owner or operator does not establish alternate financial assurance as specified in this Part, and obtain written approval of such alternate assurance from the Administrative Authority within ninety days after receipt by both the owner or operator and the Administrative Authority of a notice from the issuing institution that it has decided not to extend the letter of credit, the Administrative Authority may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last thirty days of any such extension the Administrative Authority will draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in this Part and obtain written approval of such assurance from the Administrative Authority.
- 10) The Administrative Authority will return the letter of credit to the issuing institution for termination when:

An owner or operator substitutes alternate financial assurance as specified in this Part; or

The Administrative Authority releases the owner or operator from the requirements of this Part in accordance with §20.4i).

e) Closure insurance

- 1) An owner or operator may satisfy the requirements of this Part by obtaining closure insurance which conforms to the requirements of this paragraph and submitting a certificate of such insurance to the Administrative Authority. An owner or operator of a new facility must submit the certificate of insurance to the Administrative Authority at least sixty days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste. At a minimum, the insurer must be licensed to transact the business of

insurance, or be eligible to provide insurance as an excess or surplus lines insurer, in one or more States, and authorized to transact business in Louisiana.

- 2) The wording of the certificate of insurance must be identical to the wording specified in §20.10e).
- 3) The closure insurance policy must be issued for a face amount at least equal to the current closure cost estimate, except as provided in §20.4g). The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.
- 4) The closure insurance policy must guarantee that funds will be available to close the facility whenever final closure occurs. The policy must also guarantee that once final closure begins, the insurer will be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the Administrative Authority to such party or parties as the Administrative Authority specifies.
- 5) After beginning final closure, an owner or operator, or any other person authorized to perform closure may request reimbursement for closure expenditures by submitting itemized bills to the Administrative Authority. Within sixty days after receiving bills for closure activities, the Administrative Authority will determine whether the closure expenditures are in accordance with the closure plan or otherwise justified, and if so, he will instruct the insurer to make reimbursement in such amounts as the Administrative Authority specifies in writing. If the Administrative Authority has reason to believe that the cost of closure will be significantly greater than the face amount of the policy, he may withhold reimbursement of such amounts as he deems prudent until he determines, in accordance with §20.4i), that the owner or operator is no longer required to maintain financial assurance for closure of the facility.
- 6) The owner or operator must maintain the policy in full force and effect until the Administrative Authority consents to termination of the policy by the owner or operator as specified in §20.4e)10). Failure to pay the premium, without substitution of alternate financial assurance as specified in this Part, will constitute a significant violation of these regulations, warranting such remedy as the Administrative Authority deems necessary. Such violation will be deemed to begin upon receipt by the Administrative Authority of a notice of future cancellation, termination, or failure to renew, due to nonpayment of the premium, rather than upon the date of expiration.
- 7) Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided such consent is not unreasonably refused.

- 8) The policy must provide that the insurer may not cancel, terminate or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the Administrative Authority. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the Administrative Authority and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration:

The Administrative Authority deems the facility abandoned; or

The permit is terminated or revoked, or a new permit is denied; or

Closure is ordered by the Administrative Authority or a court of competent jurisdiction; or

The owner or operator is named as debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or

The premium due is paid.

- 9) Whenever the current closure cost estimate increases to an amount greater than the face amount of the policy, the owner or operator, within 60 days after the increase, must either cause the face amount to be increased to an amount at least equal to the current closure cost estimate, and submit evidence of such increase to the Administrative Authority, or obtain other financial assurance as specified in this Part to cover the increase. Whenever the current closure cost estimate decreases, the face amount may be reduced to the amount of the current closure cost estimate following written approval by the Administrative Authority.
- 10) The Administrative Authority will give written consent to the owner or operator that he may terminate the insurance policy when:
- An owner or operator substitutes alternate financial assurance as specified in this Part; or
- The Administrative Authority releases the owner or operator from the requirements of this Part in accordance with §20.4a)3).

f) Financial test and corporate guarantee for closure

- 1) An owner or operator may satisfy the requirements of this Part by demonstrating that he passes a financial test as specified in this Section. To pass this test the owner or operator must meet the criteria of either of the following:

The owner or operator must have:

Two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5; and

Net working capital and tangible net worth each at least six times the sum of the current closure and post-closure cost estimates; and

Tangible net worth of at least \$10 million; and

Assets in the United States amounting to at least ninety percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

The owner or operator must have:

A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's; and

Tangible net worth at least six times the sum of the current closure and post-closure cost estimates; and

Tangible net worth of at least \$10 million; and

Assets located in the United States amounting to at least ninety percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

- 2) The phrase current closure and post-closure cost estimates as used in §20.4f)1) refers to the cost estimates required to be shown in paragraphs 1-4 of the letter from the owner's or operator's chief financial officer [see §20.10f)].

- 3) To demonstrate that he meets this test, the owner or operator must submit the following items to the Administrative Authority:

A letter signed by the owner's or operator's chief financial officer and worded as specified in §20.10f); and

A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

He has compared the data with the letter from the chief financial officer specified as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

- 4) An owner or operator of a new facility must submit the items specified in §20.4f)3) to the Administrative Authority at least sixty days before the date on which hazardous waste is first received for treatment, storage, or disposal.
- 5) After the initial submission of items specified in §20.4f)3), the owner or operator must send updated information to the Administrative Authority within ninety days after the close of each succeeding fiscal year. This information must consist of all three items specified in §20.4f)3).
- 6) If the owner or operator no longer meets the requirements of §20.4f)1), he must send notice to the Administrative Authority of intent to establish alternate financial assurance as specified in this Part. The notice must be sent by certified mail within ninety days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator must provide the alternate financial assurance within 120 days after the end of such fiscal year.
- 7) The Administrative Authority may, based on a reasonable belief that the owner or operator may no longer meet the requirements of §20.4f)1), require reports of financial condition at any time from the owner or operator in addition to those specified in §20.4f)3). If the Administrative Authority finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of §20.4f)1), the owner or operator must provide alternate financial assurance as specified in this Part within thirty days after notification of such a finding.
- 8) The Administrative Authority may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements [see §20.4f)3)]. An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Administrative Authority will evaluate other qualifications on an individual basis. Based on the application, the circumstances and the accessibility of the applicant's assets, the Administrative Authority may disallow the use of this test. The owner or operator must provide alternate financial assurance as specified in this Part within thirty days after notification of the disallowance.

- 9) The owner or operator is no longer required to submit the items specified in §20.4f)3) when:

An owner or operator substitutes alternate financial assurance as specified in this Part; or

The Administrative Authority releases the owner or operator from the requirements of this Part in accordance with §20.4i).

- 10) An owner or operator may meet the requirements of this Part by obtaining a written guarantee, hereinafter referred to as "corporate guarantee." The guarantor must meet the requirements of §§20.4f)1) through 20.4f)8) for owners or operators, and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in §20.10h). The corporate guarantee must accompany the items sent to the Administrative Authority as specified in §20.4f)3). The terms of the corporate guarantee must provide that:

If the owner or operator fails to perform final closure of a facility covered by the corporate guarantee in accordance with the closure plan and other permit requirements whenever required to do so, the guarantor will do so or establish a trust fund as specified in §20.4a) in the name of the owner or operator.

The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator, and to the Administrative Authority. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Administrative Authority, as evidenced by the return receipts.

If the owner or operator fails to provide alternate financial assurance as specified in this Part and obtain the written approval of such alternate assurance from the Administrative Authority within ninety days after receipt by Administrative Authority of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide such alternative financial assurance in the name of the owner or operator.

- g) Use of multiple financial mechanisms -- An owner or operator may satisfy the requirements of this Part by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds guaranteeing payment into a trust fund, letters of credit, and insurance. The mechanisms must be as specified in §§20.4a), 20.4b), 20.4d), and 20.4e), respectively, except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the current closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund

may be established for two or more mechanisms. The Administrative Authority may use any or all of the mechanisms to provide for closure of the facility.

- h) Use of a financial mechanism for multiple facilities -- An owner or operator may use a financial assurance mechanism specified in this Part to meet the requirements of this Part for more than one facility. Evidence of financial assurance submitted to the Administrative Authority must include a list showing, for each facility, the Hazardous Waste Facility Identification Number, name, address, and the amount of funds for closure assured by the mechanisms. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing the funds available through the mechanism for closure of any of the facilities covered by the mechanism, the Administrative Authority may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.
- i) Release of the owner or operator from the requirements of this Part -- Within sixty days after receiving certifications from the owner or operator and an independent registered professional engineer that closure has been accomplished in accordance with the closure plan, the Administrative Authority will notify the owner or operator in writing that he is no longer required by this Part to maintain financial assurance for closure of the particular facility, unless the Administrative Authority has reason to believe that closure has not been in accordance with the closure plan.

Sub-Chapter II Post-Closure Requirements

20.5 Cost estimate for post-closure care

- a) The owner or operator of a facility subject to post-closure monitoring or maintenance requirements must have a written estimate, in current dollars, of the annual cost of post-closure monitoring and maintenance of the facility in accordance with the applicable post-closure regulations in §§13.8, 14.11, 15.10, 16.6, and 19.7 through 19.10. The post-closure cost estimate is calculated by multiplying the annual post-closure cost estimate by the number of years of post-closure care required under Chapter 19.
- b) During the operating life of the facility, the owner or operator must adjust the post-closure cost estimate for inflation within thirty days after each anniversary of the date on which the first post-closure cost estimate was prepared. The adjustment must be made using an inflation factor derived from the annual Implicit Price Deflator for Gross National Product as published by the U.S. Department of Commerce in its Survey of Current Business. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.

- 1) The first adjustment is made by multiplying the post-closure cost estimate by the inflation factor. The result is the adjusted post-closure cost estimate.
 - 2) Subsequent adjustments are made by multiplying the latest adjusted post-closure cost estimate by the latest inflation factor.
 - c) The owner or operator must revise the post-closure cost estimate during the operating life of the facility whenever a change in the post-closure plan increases the cost of post-closure care. The revised post-closure cost estimate must be adjusted for inflation as specified in §20.5b).
 - d) The owner or operator must keep the following at the facility during the operating life of the facility: the latest post-closure cost estimate prepared in accordance with §§20.5a) and 20.5c) and, when this estimate has been adjusted, the latest adjusted post-closure cost estimate.
- 20.6 Financial assurance for post-closure care -- The owner or operator of a facility subject to post-closure monitoring or maintenance requirements must establish financial assurance for post-closure care in accordance with the approved post-closure plan for the facility. Under this Part, the owner or operator must choose from the options as specified in §§20.6a) through 20.6f), which choice the Administrative Authority must find acceptable based on the application and the circumstances.
- a) Post-closure trust fund
 - 1) An owner or operator may satisfy the requirements of this Part by establishing a post-closure trust fund which conforms to the requirements of this paragraph and submitting an originally signed duplicate of the trust agreement to the Administrative Authority. An owner or operator of a new facility must submit the originally signed duplicate of the trust agreement to the Administrative Authority at least sixty days before the date on which hazardous waste is first received for disposal. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.
 - 2) The wording of the trust agreement must be identical to the wording specified in §20.10a)1), and the trust agreement must be accompanied by a formal certification of acknowledgment (for example, see §20.10a)2). Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current post-closure cost estimate covered by the agreement.
 - 3) Payments into the trust fund must be made annually by the owner or operator over the term of the initial permit, or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter, this period is hereafter referred to as the "pay-in period." The payments into the post-closure trust fund must be made as follows:

For a new facility, the first payment must be made before the initial receipt of hazardous waste for disposal. A receipt from the trustee for this payment must be submitted by the owner or operator to the Administrative Authority before this initial receipt of hazardous waste. The first payment must be at least equal to the current post-closure cost estimate, except as provided in §20.6g), divided by the number of years in the pay-in period. Subsequent payments must be made no later than thirty days after each anniversary date of the first payment. The amount of each subsequent payment must be determined by this formula:

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

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

If an owner or operator has previously established a trust fund pursuant to Federal regulation, and the value of that trust fund is less than the current post-closure cost estimate when a permit under these regulations is awarded for the facility, the amount of the current post-closure cost estimate still to be paid into the fund must be paid in over the pay-in period as defined in §20.6a)3). Payments must continue to be made no later than thirty days after each anniversary date of the first payment made. The amount of each payment must be determined by this formula:

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

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

- 4) The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current post-closure cost estimate at the time the fund is established. However, he must maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in §20.6a)3).
- 5) If the owner or operator establishes a post-closure trust fund after having used one or more alternate mechanisms specified in this Part, his first payment must be in at least the amount that the fund would contain if the trust fund were established initially and if annual payments were made according to specifications of this Subpart.
- 6) After the pay-in period is completed, whenever the current post-closure cost estimate changes during the operating life of the facility, the owner or operator must compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within sixty days after the change in the cost

estimate, must either deposit an amount into the fund so that the fund at least equals the amount of the current post-closure cost estimate, or obtain other financial assurance as specified in this Part to cover the difference.

- 7) During the operating life of the facility, if the value of the trust fund is greater than the total amount of the current post-closure cost estimate, the owner or operator may submit a written request to the Administrative Authority for release of the amount in excess of the current post-closure cost estimate.
- 8) If an owner or operator substitutes other financial assurance as specified in this Part for all or part of the trust fund, he may submit a written request to the Administrative Authority for release of the amount in excess of the current post-closure cost estimate covered by the trust fund.
- 9) Within sixty days after receiving a request from the owner or operator for release of funds as specified in §§20.6g) or 20.6h), the Administrative Authority will instruct the trustee to release to the owner or operator such funds as the Administrative Authority specifies in writing.
- 10) During the period of post-closure care, the Administrative Authority may approve a release of funds if the owner or operator demonstrates to the Administrative Authority that the value of the trust fund exceeds the remaining cost of post-closure care.
- 11) An owner or operator, or any other person authorized to perform post-closure care, may request reimbursement for the post-closure expenditures by submitting itemized bills to the Administrative Authority. Within sixty days after receiving bills for post-closure activities, the Administrative Authority will determine whether the post-closure expenditures are in accordance with the post-closure plan or otherwise justified, and if so, he will instruct the trustee to make reimbursement in such amounts as the Administrative Authority specifies in writing.
- 12) The Administrative Authority will agree to termination of the trust when:

An owner or operator substitutes alternate financial assurance as specified in this Part; or

The Administrative Authority releases the owner or operator from the requirements of this Part in accordance with §20.6i).

b) Surety bond guaranteeing payment into a post-closure trust fund

- 1) An owner or operator may satisfy the requirements of this Part by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Administrative Authority. An owner or operator of a new facility must submit the bond to the

Administrative Authority at least sixty days before the date on which hazardous waste is first received for disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury, and approved by the Administrative Authority.

- 2) The wording of the surety bond must be identical to the wording specified in §20.10b).
- 3) The owner or operator who uses a surety bond to satisfy the requirements of this Part must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Administrative Authority. This standby trust fund must meet the requirements specified in §20.6a), except that:

An originally signed duplicate of the trust agreement must be submitted to the Administrative Authority with the surety bond; and

Until the standby trust fund is funded pursuant to the requirements of this Part, the following are not required by these regulations:

Payments into the trust fund as specified in §20.6a)3);

Updating of Schedule A of the trust agreement to show current post-closure cost estimates;

Annual valuations as required by the trust agreement; and

Notices of nonpayment as required by the trust agreement.

- 4) The bond must guarantee that the owner or operator will:

Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility; or

Fund the standby trust fund in an amount equal to the penal sum within fifteen days after an order to begin closure is issued by the Administrative Authority, or a court of competent jurisdiction; or

Provide alternate financial assurance as specified in this Part, and obtain the Administrative Authority's written approval of the assurance provided within ninety days after receipt by both the owner or operator and the Administrative Authority of a notice of cancellation of the bond from the surety.

- 5) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

- 6) The penal sum of the bond must be in an amount at least equal to the current post-closure cost estimate, except as provided in §20.6g).
 - 7) Whenever the current post-closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within sixty days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the Administrative Authority, or obtain other financial assurance as specified in this Part to cover the increase. Whenever the current post-closure cost estimate decreases, the penal sum may be reduced to the amount of the current post-closure cost estimate following written approval by the Administrative Authority.
 - 8) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator, and to the Administrative Authority. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Administrative Authority, as evidenced by the return receipts.
 - 9) The owner or operator may cancel the bond if the Administrative Authority has given prior written consent based on his receipt of evidence of alternate financial assurance as specified in this Part.
- c) Surety bond guaranteeing performance of post-closure care.
- 1) An owner or operator of a facility which has been issued a standard permit may satisfy the requirements of this Part by obtaining a surety bond which conforms to the requirements of this paragraph and by submitting the bond to the Administrative Authority. An owner or operator of a new facility must submit the bond to the Administrative Authority at least sixty days before the date on which hazardous waste is first received for disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury, and approved by the Administrative Authority.
 - 2) The wording of the surety bond must be identical to the wording specified in §20.10c).
 - 3) The owner or operator who uses a surety bond to satisfy the requirements of this Part must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Administrative Authority. This standby trust fund must meet the requirements specified in §20.6a) except that:

An originally signed duplicate of the trust agreement must be submitted to the Administrative Authority with the surety bond; and

Unless the standby trust fund is funded pursuant to the requirements of this Part, the following are not required by these regulations:

Payments into the trust fund as specified in §20.6a)3);

Updating of Schedule A of the trust agreement to show current post-closure cost estimates;

Annual valuations as required by the trust agreement; and

Notices of nonpayment as required by the trust agreement.

- 4) The bond must guarantee that the owner or operator will:

Perform post-closure care in accordance with the post-closure plan and other requirements of the permit for the facility; or

Provide alternate financial assurance as specified in this Part, and obtain the Administrative Authority's written approval of the assurance provided, within ninety days of receipt by both the owner or operator, and the Administrative Authority of a notice of cancellation of the bond from the surety.

- 5) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a determination by the Administrative Authority that the owner or operator has failed to perform post-closure care in accordance with the post-closure plan and other permit requirements, under the terms of the bond, the surety will perform post-closure care in accordance with the post-closure plan and other permit requirements, or will deposit the amount of the penal sum into the standby trust fund.
- 6) The penal sum of the bond must be in an amount at least equal to the current post-closure cost estimate.
- 7) Whenever the current post-closure cost estimate increases to an amount greater than the penal sum during the operating life of the facility, the owner or operator, within sixty days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the Administrative Authority, or obtain other financial assurance as specified in this Part. Whenever the current post-closure cost estimate decreases during the operating life of the facility, the penal sum may be reduced to the amount of the current post-closure cost estimate following written approval by the Administrative Authority.
- 8) During the period of post-closure care, the Administrative Authority may approve a decrease in the penal sum if the owner or operator demonstrates to the Administrative Authority that the amount exceeds the remaining cost of post-closure care.

- 9) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator, and to the Administrative Authority. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Administrative Authority, as evidenced by the return receipts.
- 10) The owner or operator may cancel the bond if the Administrative Authority has given prior written consent. The Administrative Authority will provide such written consent when:

An owner or operator substitutes alternate financial assurance as specified in this Part; or

The Administrative Authority releases the owner or operator from the requirements of this Part in accordance with §20.6i).

- 11) The surety will not be liable for deficiencies in the performance of post-closure care by the owner or operator after the Administrative Authority releases the owner or operator from the requirements of this Part in accordance with §20.6i).

d) Post-closure letter of credit

- 1) An owner or operator may satisfy the requirements of this Part by obtaining an irrevocable standby letter of credit which conforms to the requirements of this paragraph and by submitting the letter to the Administrative Authority. An owner or operator of a new facility must submit the letter of credit to the Administrative Authority at least sixty days before the date on which hazardous waste is first received for disposal. The letter of credit must be effective before this initial receipt of hazardous waste. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a Federal or State agency.
- 2) The wording of the letter of credit must be identical to the wording specified in §20.10d).
- 3) An owner or operator who uses a letter of credit to satisfy the requirements of this Part must also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Administrative Authority will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Administrative Authority. This standby trust fund must meet the requirements of the trust fund specified in §20.6a), except that:

An originally signed duplicate of the trust agreement must be submitted to the Administrative Authority with the letter of credit; and

Unless the standby trust fund is funded pursuant to the requirements of this Part, the following are not required by these regulations:

Payments into the trust fund as specified in §20.6c);

Updating of Schedule A of the trust agreement to show current post-closure cost estimates;

Annual valuations as required by the trust agreement; and

Notices of nonpayment as required by the trust agreement.

- 4) The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: the Hazardous Waste Facility Identification Number, name, address, and the amount of funds assured for post-closure care of the facility by the letter of credit.
- 5) The letter of credit must be irrevocable and issued for a period of at least one year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator, and the Administrative Authority by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator, and the Administrative Authority have received the notice, as evidenced by the return receipts.
- 6) The letter of credit must be issued in an amount at least equal to the current post-closure cost estimate, except as provided in §20.6g).
- 7) Whenever the current post-closure cost estimate increases to an amount greater than the amount of the credit during the operating life of the facility, the owner or operator, within sixty days after the increase, must either cause the amount of the credit to be increased so that it at least equals the current post-closure cost estimate and submit evidence of such increase to the Administrative Authority, or obtain other financial assurance as specified in this Part to cover the increase. Whenever the current post-closure cost estimate decreases during the operating life of the facility, the amount of the credit may be reduced to the amount of the current post-closure cost estimate following written approval by the Administrative Authority.
- 8) During the period of post-closure care, the Administrative Authority may approve a decrease in the amount of the letter of credit if the owner or operator demonstrates to the Administrative Authority that the amount exceeds the remaining cost of post-closure care.

- 9) Following a determination by the Administrative Authority that the owner or operator has failed to perform post-closure care in accordance with the post-closure plan and other permit requirements, the Administrative Authority may draw on the letter of credit.
- 10) If the owner or operator does not establish alternate financial assurance as specified in this Part and obtain written approval of such alternate assurance from the Administrative Authority within ninety days after receipt by both the owner or operator and the Administrative Authority of a notice from the issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the Administrative Authority will draw on the letter of credit. The Administrative Authority may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last thirty days of any such extension the Administrative Authority will draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in this Part and obtain written approval of such assurance from the Administrative Authority.
- 11) The Administrative Authority will return the letter of credit to the issuing institution for termination when:

An owner or operator substitutes alternate financial assurance as specified in this Part; or

The Administrative Authority releases the owner or operator from the requirements of this Part in accordance with §20.6i).

e) Post-closure insurance

- 1) An owner or operator may satisfy the requirements of this Part by obtaining post-closure insurance which conforms to the requirements of this paragraph and submitting a certificate of such insurance to the Administrative Authority. An owner or operator of a new facility must submit the certificate of insurance to the Administrative Authority at least sixty days before the date on which hazardous waste is first received for disposal. The insurance must be effective before this initial receipt of hazardous waste. At a minimum, the insurer must be licensed to transact the business of insurance, or be eligible to provide insurance as an excess or surplus lines insurer in one or more States, and authorized to transact business in Louisiana.
- 2) The wording of the certificate of insurance must be identical to the wording specified in §20.10e).
- 3) The post-closure insurance policy must be issued for a face amount at least equal to the current post-closure cost estimate, except as provided in §20.6g). The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

- 4) The post-closure insurance policy must guarantee that funds will be available to provide post-closure care of the facility whenever the post-closure period begins. The policy must also guarantee that once post-closure care begins, the insurer will be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the Administrative Authority, to such party or parties as the Administrative Authority specifies.
- 5) An owner or operator or any other person authorized to perform post-closure care may request reimbursement for post-closure expenditures by submitting itemized bills to the Administrative Authority. Within sixty days after receiving bills for post-closure activities, the Administrative Authority will determine whether the post-closure expenditures are in accordance with the post-closure plan or otherwise justified, and if so, he will instruct the insurer to make reimbursement in such amounts as the Administrative Authority specifies in writing.
- 6) The owner or operator must maintain the policy in full force and effect until the Administrative Authority consents to termination of the policy by the owner or operator as specified in §20.6e)11). Failure to pay the premium, without substitution of alternate financial assurance as specified in this Part, will constitute a significant violation of these regulations, warranting such remedy as the Administrative Authority deems necessary. Such violation will be deemed to begin upon receipt by the Administrative Authority of a notice of future cancellation, termination, or failure to renew due to nonpayment of the premium, rather than upon the date of expiration.
- 7) Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided such consent is not unreasonably refused.
- 8) The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the Administrative Authority. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the Administrative Authority and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration:

The Administrative Authority deems the facility abandoned; or

The permit is terminated or revoked or a new permit is denied; or
Closure is ordered by the Assistant Secretary, the Commission, or a court of competent jurisdiction; or

The owner or operator is named as debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or

The premium due is paid.

- 9) Whenever the current post-closure cost estimate increases to an amount greater than the face amount of the policy during the operating life of the facility, the owner or operator, within 60 days after the increase, must either cause the face amount to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the Administrative Authority, or obtain other financial assurance as specified in this Part to cover the increase. Whenever the current post-closure cost estimate decreases during the operating life of the facility, the face amount may be reduced to the amount of the current post-closure cost estimate following written approval by the Administrative Authority.
- 10) Commencing on the date that liability to make payments pursuant to the policy accrues, the insurer will thereafter annually increase the face amount of the policy. Such increase must be equivalent to the face amount of the policy, less any payments made, multiplied by an amount equivalent to eighty-five percent of the most recent investment rates or of the equivalent coupon-issue yield announced by the U.S. Treasury for twenty-six week Treasury securities.
- 11) The Administrative Authority will give written consent to the owner or operator that he may terminate the insurance policy when:

An owner or operator substitutes alternate financial assurance as specified in this Part; or

The Administrative Authority releases the owner or operator from the requirements of this Part in accordance with §119.6.9.

f) Financial test and corporate guarantee for post-closure care

- 1) An owner or operator may satisfy the requirements of this Part by demonstrating that he passes a financial test as specified in this paragraph. To pass this test the owner or operator must meet the criteria of either of the following:

The owner or operator must have:

Two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5; and

Net working capital and tangible net worth each at least six times the sum of the current closure and post-closure cost estimates; and

Tangible net worth of at least \$10 million; and

Assets in the United States amounting to at least ninety percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

The owner or operator must have:

A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's; and

Tangible net worth at least six times the sum of the current closure and post-closure cost estimates; and

Tangible net worth of at least \$10 million; and

Assets located in the United States amounting to at least ninety percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

2) The phrase current closure and post-closure cost estimates as used in §20.6f)1) refers to the cost estimates required to be shown in Paragraphs 1 through 4 of the letter from the owner's or operator's chief financial officer [see §20.10f)].

3) To demonstrate that he meets this test, the owner or operator must submit the following items to the Administrative Authority:

A letter signed by the owner's or operator's chief financial officer and worded as specified in §20.10f); and

A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

- 4) An owner or operator of a new facility must submit the items specified in §20.6f)3) to the Administrative Authority at least sixty days before the date on which hazardous waste is first received for disposal.
- 5) After the initial submission of items specified in §20.6f)3), the owner or operator must send updated information to the Administrative Authority within ninety days after the close of each succeeding fiscal year. This information must consist of all three items specified in §20.6f)3).
- 6) If the owner or operator no longer meets the requirements of §20.6f)1) of this Part, he must send notice to the Administrative Authority of intent to establish alternate financial assurance as specified in this Part. The notice must be sent by certified mail within ninety days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator must provide the alternate financial assurance within 120 days after the end of such fiscal year.
- 7) The Administrative Authority may, based on a reasonable belief that the owner or operator may no longer meet the requirements of §20.6f)1), require reports of financial condition at any time from the owner or operator in addition to those specified in §20.6f)3). If the Administrative Authority finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of §20.6f)1), the owner or operator must provide alternate financial assurance as specified in this Part within thirty days after notification of such a finding.
- 8) The Administrative Authority may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements [see §20.6f)3)]. An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Administrative Authority will evaluate other qualifications on an individual basis. Based on the application, the circumstances, and the accessibility of the applicant's assets, the Administrative Authority may disallow the use of this test. The owner or operator must provide alternate financial assurance as specified in this Part within thirty days after notification of the disallowance.
- 9) During the period of post-closure care, the Administrative Authority may approve a decrease in the current post-closure cost estimate for which this test demonstrates financial assurance if the owner or operator demonstrates to the Administrative Authority that the amount of the cost estimate exceeds the remaining cost of post-closure care.
- 10) The owner or operator is no longer required to submit the items specified in §20.6f)3) when:

An owner or operator substitutes alternate financial assurance as specified in this Part; or

The Administrative Authority releases the owner or operator from the requirements of this Part in accordance with §20.6i).

- 11) An owner or operator may meet the requirements of this Part by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators of §§20.6f)1) through 20.6f)9) and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in §20.10h). The corporate guarantee must accompany the items sent to the Administrative Authority specified in §20.6f)3). The terms of the corporate guarantee must provide that:

If the owner or operator fails to perform post-closure care of a facility covered by the corporate guarantee in accordance with the post-closure plan and other permit requirements whenever required to do so, the guarantor will do so or establish a trust fund as specified in §20.6a) in the name of the owner or operator.

The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Administrative Authority. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Administrative Authority, as evidenced by the return receipts.

If the owner or operator fails to provide alternate financial assurance as specified in this Part and obtain the written approval of such alternate assurance from the Administrative Authority within ninety days after receipt by both the owner or operator and the Administrative Authority of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide such alternate financial assurance in the name of the owner or operator.

- g) Use of multiple financial mechanisms -- An owner or operator may satisfy the requirements of this Part by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds guaranteeing payment into a trust fund, letters of credit, and insurance. The mechanisms must be as specified in §§20.6a), 20.6b), 20.6d), and 20.6e), respectively, except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the current post-closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The Administrative

Authority may use any or all of the mechanisms to provide for post-closure care of the facility.

- h) Use of a financial mechanism for multiple facilities -- An owner or operator may use a financial assurance mechanism specified in this Part to meet the requirements of this Part for more than one facility. Evidence of financial assurance submitted to the Administrative Authority must include a list showing, for each facility, the Hazardous Waste Facility Identification Number, name, address, and the amount of funds for post-closure assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for post-closure care of any of the facilities covered by the mechanism, the Administrative Authority may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.
- i) Release of the owner or operator from the requirements of this Part -- When an owner or operator has completed, to the satisfaction of the Administrative Authority, all post-closure care requirements in accordance with the post-closure plan, the Administrative Authority will, at the request of the owner or operator, notify him in writing that he is no longer required by this Part to maintain financial assurance for post-closure care of the particular facility.

Sub-Chapter III Common Closure and Post-Closure Requirements

- 20.7 Use of a mechanism for financial assurance of both closure and post-closure care -- An owner or operator may satisfy the requirements for financial assurance for both closure and post-closure care for one or more facilities by using a trust fund, surety bond, letter of credit, insurance, financial test, or corporate guarantee that meets the specifications for the mechanism in both §§20.4 and 20.6. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism has been established and maintained for financial assurance of closure and post-closure care.

Sub-Chapter IV Insurance Requirements

20.8 Liability requirements

- a) Coverage for sudden accidental occurrences -- An owner or operator of a hazardous waste treatment, storage, or disposal facility, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for sudden accidental occurrences in the amount of at least \$1 million

per occurrence, exclusive of legal defense costs. This liability coverage may be demonstrated in one of three ways, as specified in §§20.8a)1), 20.8a)2), and 20.8a)3). For any facility that treats, stores, or disposes by land treatment (i.e., surface impoundment, waste pile, landfarm, or landfill) any Acute Hazardous Waste (see Table 3 of Chapter 24), or any Toxic Waste listed because of Toxicity or Reactivity (see Table 4 of Chapter 24) the liability coverage must be at least \$5 million per occurrence, exclusive of legal defense costs.

- 1) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in this paragraph.

Each insurance policy must be amended by attachment of the Hazardous Waste Facility Liability Endorsement or evidenced by a Certificate of Liability Insurance. The wording of the endorsement must be identical to the wording specified in §20.10i). The wording of the certificate of insurance must be identical to the wording specified in §20.10j). The owner or operator must submit a signed duplicate original of the endorsement or the certificate of insurance to the Administrative Authority. If requested by the Administrative Authority, the owner or operator must provide a signed duplicate original of the insurance policy. An owner or operator of a new facility must submit the signed duplicate original of the Hazardous Waste Facility Liability Endorsement or the Certificate of Liability insurance to the Administrative Authority at least sixty days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste.

Each insurance policy must be issued by an insurer which, at a minimum, is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one of more States, and authorized to transact business in Louisiana.

- 2) An owner or operator may meet the requirements of this section by passing a financial test for liability coverage as specified in §20.8f).
 - 3) An owner or operator may demonstrate the required liability coverage through use of both the financial test and insurance as these mechanisms are specified in this Part. The amounts of coverage demonstrated must total at least the minimum amounts required by this paragraph.
- b) Coverage for nonsudden accidental occurrences -- An owner or operator of a surface impoundment, landfill, or land treatment facility which is used to manage hazardous waste, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least \$3 million per occurrence with an annual

aggregate of at least \$6 million, exclusive of legal defense costs. This liability coverage may be demonstrated in one of three ways, as specified in §§20.8b)1), 20.8b)2), and 20.8b)3). For any facility that treats, stores, or disposes by land treatment (i.e., surface impoundments, waste piles, landfarm or landfill) any Acute Hazardous Waste (see Table 3 of Chapter 24), or any Toxic Waste listed because of Toxicity or Reactivity (see Table 4 of Chapter 24) the liability coverage must be at least \$5 million per occurrence with an annual aggregate of at least \$10 million, exclusive of legal defense costs.

- 1) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in this paragraph.

Each insurance policy must be amended by attachment of the Hazardous Waste Facility Liability Endorsement or evidenced by a Certificate of Liability Insurance. The wording of the endorsement must be identical to the wording specified in §20.10i). The wording of the certificate of insurance must be identical to the wording specified in §20.10j). The owner or operator must submit a signed duplicate original of the endorsement or the certificate of insurance to the Administrative Authority. If requested by the Administrative Authority, the owner or operator must provide a signed duplicate original of the insurance policy. An owner or operator of a new facility must submit the signed duplicate original of the Hazardous Waste Facility Liability Endorsement or the Certificate of Liability Insurance to the Administrative Authority at least sixty days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste.

Each insurance policy must be issued by an insurer which, at a minimum, is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer in one or more States and authorized to transact insurance requirement business in Louisiana.

- 2) An owner or operator may meet the requirements of this Part by passing a financial test for liability coverage as specified in §20.8f).
 - 3) An owner or operator may demonstrate the required liability coverage through use of both the financial test and insurance as these mechanisms are specified in this Part. The amounts of coverage must total at least the minimum amounts required by this paragraph.
 - 4) For existing facilities, the required liability coverage for non-sudden accidental occurrences must be demonstrated within 180 days of the effective date of this regulation.
- c) Request for variance -- If an owner or operator can demonstrate to the satisfaction of the Administrative Authority that the levels of financial responsibility required by §§20.8a) and 20.8b) are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the owner or operator

may obtain a variance from the Administrative Authority. The request for a variance must be submitted to the Administrative Authority as part of the application under Chapter 4 for a facility that does not have a permit, or pursuant to the procedures for permit modification under Chapter 4 for a facility that has a permit. If granted, the variance will take the form of an adjusted level of required liability coverage, such level to be based on the Administrative Authority's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. The Administrative Authority may require an owner or operator who requests a variance to provide such technical and engineering information as is deemed necessary by the Administrative Authority to determine a level of financial responsibility other than that required by §§20.8a) and 20.8b). Any request for a variance for a permitted facility will be treated as a request for a permit modification under §3.11.

- d) Adjustments by the Administrative Authority -- If the Administrative Authority determines that the levels of financial responsibility required by §§20.8a) or 20.8b) are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the Administrative Authority may adjust the level of financial responsibility required by §§20.8a) and 20.8b) as may be necessary to protect human health and the environment. This adjusted level will be based on the Administrative Authority's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. In addition, if the Administrative Authority determines that there is a significant risk to human health and the environment from nonsudden accidental occurrences resulting from the operations of a facility that is not a surface impoundment, landfill, or land treatment facility, he may require that an owner or operator of the facility comply with §20.8b). An owner or operator must furnish to the Administrative Authority, within a reasonable time, any information which the Administrative Authority requests to determine whether cause exists for such adjustments of level or type of coverage. Any adjustment of the level or type of coverage for a facility that has a permit will be treated as a permit modification under §3.11.
- e) Period of coverage -- An owner or operator must continuously provide liability coverage for a facility as required by this Part until certifications of closure of the facility, as specified in Chapter 19, are received by the Administrative Authority.
- f) Financial test for liability coverage
 - 1) An owner or operator may satisfy the requirements of this Part by demonstrating that he passes a financial test as specified in this paragraph. To pass this test the owner or operator must meet the criteria of either of the following:

The owner or operator must have:

Net working capital and tangible net worth each at least six times the amount of liability coverage to be demonstrated by this test; and

Tangible net worth of at least \$10 million; and

Assets in the United States amounting to either: (1) at least ninety percent of his total assets; or (2) at least six times the amount of liability coverage to be demonstrated by this test.

The owner or operator must have:

A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's; and

Tangible net worth of at least \$10 million; and

Tangible net worth at least six times the amount of liability coverage to be demonstrated by this test; and

Assets located in the United States amounting to either: (1) at least ninety percent of his total assets; or (2) at least six times the amount of liability coverage to be demonstrated by this test.

- 2) The phrase amount of liability coverage as used in §20.8f)(1) refers to the annual aggregate amounts for which coverage is required under §§20.8a) and 20.8b).
- 3) To demonstrate that he meets this test, the owner or operator must submit the following three items to the Administrative Authority:

A letter signed by the owner's or operator's chief financial officer and worded as specified in §20.10g). If an owner or operator is using the financial test to demonstrate both assurance for closure or post-closure care, as specified by §§20.4f), 20.6f), 20.4e), and 20.6e) and liability coverage, he must submit the letter specified in §20.10g) to cover both forms of financial responsibility; a separate letter as specified in §20.10f) is not required.

A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year.

A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

- 4) An owner or operator of a new facility must submit the items specified in §20.8f)3) to the Administrative Authority at least sixty days before the date on which hazardous waste is first received for treatment, storage, or disposal.
- 5) After the initial submission of items specified in §20.8f)3), the owner or operator must send updated information to the Administrative Authority within ninety days after the close of each succeeding fiscal year. This information must consist of all three items specified in §20.8f)3).
- 6) If the owner or operator no longer meets the requirements of §20.8f)1), he must obtain insurance for the entire amount of required liability coverage as specified in this Part. Evidence of insurance must be submitted to the Administrative Authority within ninety days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the test requirements.
- 7) The Administrative Authority may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements [see §20.8f)3)]. An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Administrative Authority will evaluate other qualifications on an individual basis. Based on the application, the circumstances and the accessibility of the applicant's assets, the Administrative Authority may disallow the use of this test. The owner or operator must provide evidence of insurance for the entire amount of required liability coverage as specified in this Part within thirty days after notification of disallowance.

Sub-Chapter V Incapacity Regulations

20.9 Incapacity of owners or operators, guarantors, or financial institutions

- a) An owner or operator must notify the Administrative Authority by certified mail of the commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming the owner or operator as debtor, within ten days after commencement of the proceeding. A guarantor of a corporate guarantee as specified in §§20.4f) and 20.6f) must make such a notification if he is named as debtor, as required under the terms of the corporate guarantee [see §20.10h)].
- b) An owner or operator who fulfills the requirements of §§20.4, 20.6, or 20.8 by obtaining a trust fund, surety bond, letter of credit, or insurance policy will be deemed to be without the required financial assurance

or liability coverage in the event of bankruptcy of the trustee or issuing institution, or a suspension or revocation of the authority of the trustee institution to act as trustee or of the institution issuing the surety bond, letter of credit, or insurance policy to issue such instruments. The owner or operator must establish other financial assurance or liability coverage within sixty days after such an event.

Sub-Chapter VI
Financial and Insurance Instruments

20.10 Wording of the instruments

a) Trust agreement

- 1) A trust agreement for a trust fund as specified in §§20.4a) or 20.6a) must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

TRUST AGREEMENT

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

WHEREAS, the Environmental Control Commission of the State of Louisiana, an agency of the State of Louisiana, has established certain regulations applicable to the Grantor, requiring that an owner or operator of a hazardous waste management facility shall provide assurance that funds will be available when needed for closure and/or post-closure care of the facility;

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

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

NOW, THEREFORE, the Grantor and the Trustee agree as follows:

SECTION 1. DEFINITIONS

As used in this agreement:

- (a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.
- (b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

- (c) The term "Commission" means the Louisiana Environmental Control Commission and any successor commission or agency.
- (d) The term "Assistant Secretary" means the Assistant Secretary, Office of Environmental Affairs, Louisiana Department of Natural Resources.
- (e) The term "Administrative Authority" means the Commission, the Assistant Secretary, or a person designated by either to act therefor.

SECTION 2. IDENTIFICATION OF FACILITIES AND COST ESTIMATES

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

SECTION 3. ESTABLISHMENT OF FUND

The Grantor and the Trustee hereby establish a trust fund, the "Fund," for the benefit of the Louisiana Department of Natural Resources. The Grantor and the Trustee intend that no third party have access to the fund except as herein provided. The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. Such property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the Administrative Authority.

SECTION 4. PAYMENT FOR CLOSURE AND POST-CLOSURE CARE

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

SECTION 5. PAYMENTS COMPRISING THE FUND

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

SECTION 6. TRUSTEE MANAGEMENT

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

- (a) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2.(a), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government;
- (b) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or State government; and
- (c) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

SECTION 7. COMMINGLING AND INVESTMENT

The Trustee is expressly authorized in its discretion:

- (a) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and
- (b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

SECTION 8. EXPRESS POWERS OF TRUSTEE

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

- (a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to

inquire into the validity or expediency of any such sale or other disposition;

- (b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;
- (c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;
- (d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and
- (e) To compromise or otherwise adjust all claims in favor of or against the Fund.

SECTION 9. TAXES AND EXPENSES

All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

SECTION 10. ANNUAL EVALUATION

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

SECTION 11. ADVICE OF COUNSEL

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

SECTION 12. TRUSTEE COMPENSATION

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

SECTION 13. SUCCESSOR TRUSTEE

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

SECTION 14. INSTRUCTIONS TO THE TRUSTEE

All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendment to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests and instructions. All orders, requests, and instructions by the Administrative Authority to the Trustee shall be in writing, signed by the Administrative Authority, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or Administrative Authority hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or Administrative Authority, except as provided for herein.

SECTION 15. NOTICE OF NONPAYMENT

The Trustee shall notify the Grantor and the Administrative Authority, by certified mail, within ten days following the expiration of the thirty-day

period after the anniversary of the establishment of the Trust, if no payment is received from the Grantor during that period. After the pay-in period is completed, the Trustee shall not be required to send a notice of nonpayment.

SECTION 16. AMENDMENT OF AGREEMENT

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

SECTION 17. IRREVOCABILITY AND TERMINATION

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

SECTION 18. IMMUNITY AND INDEMNIFICATION

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

SECTION 19. CHOICE OF LAW

This Agreement shall be administered, construed, and enforced according to the laws of the State of Louisiana.

SECTION 20. INTERPRETATION

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

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their respective officers duly authorized [and their corporate seals to be hereunto affixed] and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in §20.10a)1) of the Louisiana Hazardous Waste Regulations as such regulations were constituted on the date first above written.

WITNESSES:

GRANTOR:

By: _____

Its: _____
(SEAL)

TRUSTEE:

By: _____

Its: _____
(SEAL)

THUS DONE AND PASSED in my office in _____, on the ____ day of _____, 19____, in the presence of _____ and _____, competent witnesses, who hereunto sign their names with the said appearers and me, Notary, after reading the whole.

NOTARY PUBLIC

- 2) The following is an example of the certification of acknowledgment which must accompany the trust agreement for a trust fund as specified in §§20.4a)2) and 20.6a)2).

STATE OF LOUISIANA
PARISH OF _____

BE IT KNOWN, that on this ____ day of _____, 19____, before me, the undersigned Notary Public, duly commissioned and qualified within the State and Parish aforesaid, and in the presence of the witnesses hereinafter named and undersigned, personally came and appeared _____, to me well known, who declared and acknowledged that he had signed and executed the foregoing instrument as his act and deed, and as the act and deed of the _____, a corporation, for the consideration, uses and purposes and on terms and conditions therein set forth.

And the said appearer, being by me first duly sworn, did depose and say that he is the _____ of said corporation and that he signed and executed said instrument in his said capacity, and under authority of the Board of Directors of said corporation.

Thus done and passed in the State and Parish aforesaid, on the day and date first hereinabove written, and in the presence of _____ and _____, competent witnesses, who have hereunto subscribed their names as such, together with said appearer and me, said authority, after due reading of the whole.

WITNESSES:

NOTARY PUBLIC

b) Payment bond

A surety bond guaranteeing payment into a trust fund, as specified in §§20.4b) or 20.6b), must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted.

FINANCIAL GUARANTEE BOND

Date bond executed: _____

Effective date: _____

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

Type of organization: [insert "individual," "joint venture," "partnership," or "corporation"]

State of incorporation: _____

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

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

Total penal sum of bond: \$ _____

Surety's bond number: _____

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

WHEREAS, said Principal is required, under the Resource Conservation and Recovery Act as amended (RCRA) and the Louisiana Environmental Affairs Act, La. R.S. 30:1051, et seq, to have a permit in order to own or operate the hazardous waste management facility(ies) identified above; and

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

WHEREAS, said Principal shall establish a standby trust fund as is required by the Louisiana Hazardous Waste Regulations when a surety bond is used to provide such financial assurance;

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

OR, if the Principal shall fund the standby trust fund in such amount(s) within fifteen days after an order to begin closure is issued by the Assistant Secretary, the Commission, or a court of competent jurisdiction,

OR, if the Principal shall provide alternate financial assurance as specified in Chapter 20 of the Louisiana Hazardous Waste Management Plan, and obtain written approval from the Administrative Authority of such assurance, within ninety days after the date notice of cancellation is received by both the Principal and the Administrative Authority from the Surety(ies), then this obligation shall be null and void, otherwise it is to remain in full force and effect.

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

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

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

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

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

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly in accordance with Chapter 20 of the Louisiana Hazardous Waste Regulations, and the conditions of the Hazardous Waste Facility permit so that it guarantees a new closure and/or post-closure amount, provided that the penal sum does not increase or decrease without the written permission of the Administrative Authority.

The Principal and Surety(ies) hereby agree that no portion of the penal sum may be expended without prior written approval of the Administrative Authority.

IN WITNESS WHEREOF, the Principal and the Surety have executed this FINANCIAL GUARANTEE BOND and have affixed their seals on the date set forth above.

Those persons whose signature appear below hereby certify that they are authorized to execute this FINANCIAL GUARANTEE BOND on behalf of the Principal and Surety(ies), that each Surety hereto is authorized to do business in the State of Louisiana, and that the wording of this surety bond is identical to the wording specified in §20.10b) of the Hazardous Waste Regulations as such regulations were constituted on the date this bond was executed.

PRINCIPAL

[Signature(s)]
[Name(s)]
[Title(s)]
[Corporate Seal]

CORPORATE SURETIES

[Name and address]
State of incorporation: _____
Liability Limit: _____
[Signature(s)]
[Name(s) and title(s)]
[Corporate Seal]
[This information must be provided for each co-surety]
Bond Premium: \$ _____

c) Performance bond

A surety bond guaranteeing performance of closure and/or post-closure care, as specified in §§20.4c) or 20.6c), must be worded as follows, except that the instructions in brackets are to be replaced with the relevant information and the brackets deleted:

PERFORMANCE BOND

Date bond executed: _____
Effective date: _____
Principal: [Legal name and business address of owner or operator]

Type of organization: [insert "individual," "joint venture," "partnership," or "corporation"]

State of incorporation: _____

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

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

Total penal sum of bond: \$ _____

Surety's bond number _____

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

WHEREAS, said Principal is required, under the Resource Conservation and Recovery Act as amended (RCRA) and the Louisiana Environmental Affairs Act, La. R.S. 30:1051, et seq, to have a permit in order to own or operate the hazardous waste management facility(ies) identified above; and

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

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

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

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

OR, if the Principal shall provide alternate financial assurance as specified in Chapter 20 of the Hazardous Waste Regulations, and obtain the Administrative Authority's written approval of such assurance, within ninety days after

the date notice of cancellation is received by both the Principal and Administrative Authority, then this obligation shall be null and void, otherwise it is to remain in full force and effect.

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

Upon notification by the Administrative Authority that the Principal has been found in violation of the closure requirements of the Hazardous Waste Regulations or of its permit, for the facility for which this bond guarantees performances of closure, the Surety(ies) shall either perform closure in accordance with the closure plan and other permit requirements, or place the closure amount guaranteed for the facility into the standby trust fund as directed by the Administrative Authority.

Upon notification by the Administrative Authority that the Principal has been found in violation of the post-closure requirements of the Hazardous Waste Regulations or of its permit for the facility for which this bond guarantees performance of post-closure, the Surety(ies) shall either perform post-closure in accordance with the post-closure plan and other permit requirements or place the post-closure amount guaranteed for the facility into the standby trust fund as directed by the Administrative Authority.

Upon notification by the Administrative Authority that the Principal has failed to provide alternate financial assurance as specified in Chapter 20 of the Hazardous Waste Regulations, and obtain written approval of such assurance from the Administrative Authority during the ninety days following receipt by both the Principal and the Administrative Authority of a notice of cancellation of the bond, the Surety(ies) shall place funds in the amount guaranteed for the facility into the standby fund as directed by the Administrative Authority.

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

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

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

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

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly in accordance with Chapter 20 of the Hazardous Waste Regulations, and the conditions of the Hazardous Waste Facility permit so that it guarantees a new closure and/or post-closure amount, provided that the penal sum does not increase or decrease without the written permission of the Administrative Authority.

The Principal and Surety(ies) hereby agree that no portion of the penal sum may be expended without prior written approval of the Administrative Authority.

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

Those persons whose signature appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety, and that the wording of this surety bond is identical to the wording specified in §20.10c) of the Hazardous Waste Regulations such regulations was constituted on the date this bond was executed.

PRINCIPAL

[Signature(s)]
[Name(s)]
[Title(s)]
[Corporate Seal]

CORPORATE SURETY(IES)

[Name and address]
State of incorporation: _____
Liability limit: \$ _____
[Signature(s)]
[Name(s) and title(s)]
[Corporate Seal]
[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]
Bond premium: \$ _____

d) Letter of credit

A letter of credit, as specified in §§20.4d) or 20.6d) must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

IRREVOCABLE STANDBY LETTER OF CREDIT

Assistant Secretary
Office of Environmental Affairs
Louisiana Department of Natural Resources
P. O. Box 44066
Baton Rouge, LA 70804

Sir:

We hereby establish our Irrevocable Standby Letter of Credit No. _____ in favor of the Department of Natural Resources of the State of Louisiana at the request and for the account of [owner's or operator's name and address] for the closure and post-closure fund for its _____, facility at _____, Louisiana, for any sum or sums up to the aggregate amount of U.S. dollars \$ _____ upon presentation of:

- (1) A sight draft, bearing reference to the Letter of Credit No. _____ drawn by the [insert as Administrative Authority, either the Environmental Control Commission or its designated representative, or the Assistant Secretary or his designated representative], together with;
- (2) A statement signed by the [insert as Administrative Authority, either the Environmental Control Commission or its designated representative, or the Assistant Secretary or his designated representative], declaring that the amount of the draft is payable into the standby trust fund pursuant to the Louisiana Environmental Affairs Act, La. R.S. 30:1051, et seq.

This Letter of Credit is effective as of _____, 19____, and will expire on _____, 19____, but such expiration date will be automatically extended for a period of at least one year on the above expiration date [_____, 19____] and on each successive expiration date thereafter, unless, at least 120 days before the then current expiration date, we notify both you and [name of owner/operator] by certified mail that we have decided not to extend this Letter of Credit beyond the then current expiration date. In the event we give such notification, any unused portion of this Letter of Credit shall be available upon presentation of your sight draft for 120 days after the date of receipt by both you and [name of owner/operator], as shown on the signed return receipts.

Whenever this Letter of Credit is drawn under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us, and we shall deposit the amount of the draft directly into the standby trust fund of [name of owner/operator] in accordance with your instructions.

Except to the extent otherwise expressly agreed, the Uniform Customs and Practice for Documentary Letters of Credit (1974 Revision), International Chamber of Commerce Publication No. 290, shall apply to this Letter of Credit.

We certify that the wording of this Letter of Credit is identical to the wording specified in §20.10d) of the Hazardous Waste Management Plan as such regulations were constituted on the date shown immediately below.

[Signature(s) and Titles of Official(s)
of issuing institutions]

[DATE]

- e) A certificate of insurance as specified in §§20.4e) or 20.6e), must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CERTIFICATE OF INSURANCE FOR CLOSURE OR POST-CLOSURE CARE

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

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

Facilities Covered: [List for each facility:

The Hazardous Waste Facility Identification Number, name, address, and the amount of insurance for closure and/or the amount for post-closure care (these amounts for all facilities covered must total the face amount shown below).]

Face Amount: \$ _____

Policy Number: _____

Effective Date: _____

The Insurer hereby certifies that it has issued to the Insured the policy of insurance identified above to provide financial assurance for [insert "closure" or "closure and post-closure care" or "post-closure care"] for the facilities identified above. The Insurer further warrants that such policy conforms in all respects with the requirements of §§20.4e) and 20.6e) of the Louisiana Hazardous Waste Regulations as applicable and as such regulations were constituted on the date shown immediately below. It is agreed that any provision of the policy inconsistent with such regulations is hereby amended to eliminate such inconsistency.

Whenever requested by the Administrative Authority, the Insurer agrees to furnish to the Administrative Authority a duplicate original of the policy listed above, including all endorsements thereon.

I hereby certify that the wording of this certificate is identical to the wording specified in §20.10e) of the Louisiana Hazardous Waste Regulations as such regulations were constituted on the date shown immediately below and that Insurer is authorized to conduct insurance business in the State of Louisiana.

[Authorized signature for Insurer]

[Name of person signing]

[Title of person signing]

Signature of witness or notary: _____

[Date]

- f) Closure guarantee

A letter from the chief financial officer, as specified in §§20.4f)3) or 20.6f)3), must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

Assistant Secretary
Office of Environmental Affairs
Louisiana Department of Natural Resources
P. O. Box 44066
Baton Rouge, LA 70804

Sir:

I am the chief financial officer of [name and address of firm]. This letter is in support of this firm's use of the financial test to demonstrate financial assurance, as specified in Chapter 20 of the Louisiana Hazardous Waste Regulations (LHWR).

[Fill out the following four paragraphs regarding facilities and associated cost estimates. If your firm has no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its Hazardous Waste Facility Identification Number,* name, address, and current closure and/or post-closure cost estimates. Identify each cost estimate as to whether it is for closure or post-closure care.]

1. This firm is the owner or operator of the following facilities for which financial assurance for closure or post-closure care is demonstrated through the financial test specified in Chapter 20 of the LHWR. The current closure and/or post-closure cost estimates covered by the test are shown for each facility: _____
2. This firm guarantees, through the corporate guarantee specified in Chapter 20 of the LHWR, the closure or post-closure care of the following facilities owned or operated by subsidiaries of this firm. The current cost estimates for the closure or post-closure care so guaranteed are shown for each facility: _____
3. In States other than Louisiana, this firm, as owner or operator or guarantor, is demonstrating financial assurance for the closure or post-closure care of the following facilities through the use of a test equivalent or substantially equivalent to the financial test specified in Chapter 20 of the LHWR. The current closure and/or post-closure cost estimates covered by such a test are shown for each facility: _____
4. This firm is the owner or operator of the following hazardous waste management facilities for which financial assurance for closure or, if a disposal facility, post-closure care, is not demonstrated either to the U.S. Environmental Protection Agency or to a State through the financial test or any other financial assurance mechanism specified in Chapter 20 of the LHWR and/or equivalent or substantially equivalent State mechanisms. The current closure and/or post-closure cost estimates not covered by such financial assurance are shown for each facility: _____

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

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

[Fill in Alternative I if the first criteria of §§20.4f)1) or 20.6f)1) are used. Fill in Alternative II if the second criteria of §§20.4f)1) or 20.6f)1) are used.]

ALTERNATIVE I

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

ALTERNATIVE II

1. Sum of current closure and post-closure cost estimates [total of all cost estimates shown in the four paragraphs above] \$ _____
 2. Current bond rating of most recent issuance of this firm and name of rating service: _____
 3. Date of issuance of bond: _____
 4. Date of maturity of bond: _____
 - * 5. Tangible net worth [if any portion of the closure and post-closure cost estimate is included in "total liabilities" on your firm's financial statements, you may add the amount of that portion to this line:
\$ _____]
 - * 6. Total assets in U.S. (required only if less than 90% of firm's assets are located in the U.S.): \$ _____
- | | YES | NO |
|---|-------|-------|
| 7. Is line 5 at least \$10 million? | _____ | _____ |
| 8. Is line 5 at least 6 times line 1? | _____ | _____ |
| | YES | NO |
| * 9. Are at least 90% of firm's assets located in the U.S.? If not, complete line 10. | _____ | _____ |
| 10. Is line 6 at least 6 times line 1? | _____ | _____ |

I hereby certify that the wording of this letter is identical to the wording specified in §20.10f) as such regulations were constituted on the date shown immediately below.

[Signature]

[Name]

[Title]

[Date]

g) Liability coverage guarantee

A letter from the chief financial officer, as specified in §20.8f)3), must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Letter from Chief Financial Officer (to demonstrate liability coverage or to demonstrate both liability coverage and assurance of closure of post-closure care).

Assistant Secretary
Office of Environmental Affairs
Louisiana Department of Natural Resources
P. O. Box 44066
Baton Rouge, LA 70804

Dear Sir:

I am the chief financial officer of [owner's or operator's name and address]. This letter is in support of the use of the financial test to demonstrate financial responsibility for liability coverage [insert "and closure and/or post-closure care" if applicable] as specified in Chapter 20 of the Louisiana Hazardous Waste Regulations (LHWR).

[Fill out the following paragraph regarding facilities and liability coverage. For each facility, include its Hazardous Waste Facility Identification Number, name, and address.]

The owner or operator identified above is the owner or operator of the following facilities for which liability coverage is being demonstrated through the financial test specified in Chapter 20 of the LHWR.

[If you are using the financial test to demonstrate coverage of both liability and closure and post-closure care, fill in the following four paragraphs regarding facilities and associated closure and post-closure cost estimates. If there are no facilities that belong in a particular paragraph, write "none" in the space indicated. For each facility, include its Hazardous Waste Facility Identification Number, name, address, and current closure and/or post-closure cost estimates. Identify each cost estimate as to whether it is for closure or post-closure care.]

1. The owner or operator identified above owns or operates the following facilities for which financial assurance for closure or post-closure care is demonstrated through the financial test specified in Chapter 20 of the LHWR. The current closure and/or post-closure cost estimates covered by the test are shown for each facility: _____
2. The owner or operator identified above guarantees, through the corporate guarantee specified in Chapter 20 of the LHWR, the closure and post-closure care of the following facilities owned or operated by its subsidiaries. The current cost estimates for the closure or post-closure care so guaranteed are shown for each facility: _____
3. In States other than Louisiana, this owner or operator is demonstrating financial assurance for the closure or post-closure care of the following facilities through the use of a test equivalent or substantially equivalent to the financial test specified in Chapter 20 of the LHWR. The current closure and/or post-closure cost estimates covered by such a test are shown for each facility:

4. The owner or operator identified above owns or operates the following hazardous waste management facilities for which financial assurance for

11. Is line 6 at least 6 times line 1?

ALTERNATIVE II

1. Amount of annual aggregate liability coverage to be demonstrated:
\$
2. Current bond rating of most recent issuance and name of rating service:
3. Date of issuance of bond:
4. Date of maturity of bond:
- * 5. Tangible net worth: \$
- * 6. Total assets in U.S. required only if less than 90% of assets are located in the U.S.: \$

	YES	NO
7. Is line 5 at least \$10 million?	<u> </u>	<u> </u>
8. Is line 5 at least 6 times line 1?	<u> </u>	<u> </u>
* 9. Are at least 90% of assets located in the U.S.? If not, complete line 10.	<u> </u>	<u> </u>
10. Is line 6 at least 6 times line 1?	<u> </u>	<u> </u>

[Fill in Part B if you are using the financial test to demonstrate assurance of both liability coverage and closure or post-closure care.]

PART B. CLOSURE OR POST-CLOSURE CARE AND LIABILITY COVERAGE

[Fill in Alternative I if the first criteria of §§20.4f)1) or 20.6f)1) and 20.8f)1) are used. Fill in Alternative II if the second criteria of §§20.4f)1) or 20.6f)1) and 20.8f)1) are used.]

ALTERNATIVE I

1. Sum of current closure and post-closure cost estimates (total of all cost estimates listed above: \$
2. Amount of annual aggregate liability coverage to be demonstrated:
\$
3. Sum of lines 1 and 2: \$
- * 4. Total liabilities (if any portion of your closure or post-closure cost cost estimates is included in your total liabilities, you may deduct that

portion from this line and add that amount to lines 5 and 6):
\$ _____

- * 5. Tangible net worth: \$ _____
- * 6. Net worth: \$ _____
- * 7. Current assets: \$ _____
- * 8. Current liabilities: \$ _____
- 9. Net working capital (line 7 minus line 8): \$ _____
- * 10. The sum of net income plus depreciation, depletion, and amortization:
\$ _____
- * 11. Total assets in U.S. (required only if less than 90% of assets are lo-
cated in the U.S.): \$ _____

	YES	NO
12. Is line 5 at least \$10 million?	_____	_____
13. Is line 5 at least 6 times line 3?	_____	_____
14. Is line 9 at least 6 times line 3?	_____	_____
* 15. Are at least 90% of assets located in the U.S.? If not, complete line 16.	_____	_____
16. Is line 11 at least 6 times line 3?	_____	_____
17. Is line 4 divided by line 6 less than 2.0?	_____	_____
18. Is line 10 divided by line 4 greater than 0.1?	_____	_____
19. Is line 7 divided by line 8 greater than 1.5?	_____	_____

ALTERNATIVE II

- 1. Sum of current closure and post-closure cost estimates (total of all cost
estimates listed above): \$ _____
- 2. Amount of annual aggregate liability coverage to be demonstrated:
\$ _____
- 3. Sum of lines 1 and 2: \$ _____
- 4. Current bond rating of most recent issuance and name of rating
service: _____

5. Date of issuance of bond: _____
6. Date of maturity of bond: _____
- * 7. Tangible net worth (if any portion of the closure or post-closure cost estimates is included in "total liabilities" on your financial statements you may add that portion to this line): \$ _____
- * 8. Total assets in the U.S. (required only if less than 90% of assets are located in the U.S.): \$ _____
- | | YES | NO |
|---|-------|-------|
| 9. Is line 7 at least \$10 million? | _____ | _____ |
| 10. Is line 7 at least 6 times line 3? | _____ | _____ |
| * 11. Are at least 90% of assets located in the U.S.? If not, complete line 12. | _____ | _____ |
| 12. Is line 8 at least 6 times line 3? | _____ | _____ |

I hereby certify that the wording of this letter is identical to the wording specified in §20.10g) as such regulations were constituted on the date shown immediately below.

[Signature]
 [Name]
 [Title]
 [Date]

- h) A corporate guarantee, as specified in §§20.4f) or 20.6f), must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CORPORATE GUARANTEE FOR CLOSURE OR POST-CLOSURE CARE

Guarantee made this [date] by [name of guaranteeing entity], a business corporation organized under the laws of the State of [insert name of State], herein referred to as guarantor, to the Louisiana Department of Natural Resources, obligee, on behalf of our subsidiary [owner or operator] of [business address].

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in §§20.4f) and 20.6f) of the Louisiana Hazardous Waste Regulations (LHWR).
2. [Owner or operator] owns or operates the following hazardous waste management facility(ies) covered by this guarantee: [List for each facility: Hazardous Waste Facility Identification Number, name, and address.

Indicate for each whether guarantee is for closure, post-closure care, or both.]

3. "Closure plans" and "post-closure plans" as used below refer to the plans maintained as required by Chapter 20 of the LHWR for the closure and post-closure care of facilities as identified above.
4. For value received from [owner or operator], guarantor guarantees to the Louisiana Department of Natural Resources that in the event that [owner or operator] fails to perform [insert "closure," "post-closure care" or "closure and post-closure care"] of the above facility(ies) in accordance with the closure or post-closure plans and other permit or interim status requirements whenever required to do so, the guarantor shall do so or establish a trust fund as specified in Chapter 20 of the LHWR, as applicable, in the name of [owner or operator] in the amount of the current closure or post-closure cost estimates as specified in Chapter 20 of the LHWR.
5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within ninety days, by certified mail, notice to the Administrative Authority and to [owner or operator] that he intends to provide alternative financial assurance as specified in Chapter 20 of the LHWR, as applicable, in the name of [owner or operator]. Within 120 days after the end of such fiscal year, the guarantor shall establish such financial assurance unless [owner or operator] has done so.
6. The guarantor agrees to notify the Administrative Authority by certified mail, of a voluntary or involuntary proceeding under Title 11 (bankruptcy), U.S. Code, naming guarantor as debtor, within ten days after commencement of the proceeding.
7. Guarantor agrees that within thirty days after being notified by the Administrative Authority of a determination that guarantor no longer meets the financial test criteria or that he is disallowed from continuing as a guarantor of closure or post-closure care, he shall establish alternate financial assurance as specified in Chapter 20 of the LHWR, as applicable, in the name of [owner or operator] unless [owner or operator] has done so.
8. Guarantor agrees to remain bound under this guarantee notwithstanding any or all of the following: amendment or modification of the closure or post-closure plan, amendment or modification of the permit, the extension or reduction of the time of performance of closure or post-closure, or any other modification or alteration of an obligation of the owner or operator pursuant to the LHWR.
9. Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable financial assurance requirements of Chapter 20 of the LHWR for the above-listed facilities, except that guarantor may cancel this guarantee by sending notice by

certified mail to the Administrative Authority and to [owner or operator], such cancellation to become effective no earlier than 120 days after receipt of such notice by both the Administrative Authority and [owner or operator], as evidenced by the return receipts.

10. Guarantor agrees that if [owner or operator] fails to provide alternate financial assurance as specified in Chapter 20 of the LHWR as applicable, and obtain written approval of such assurance from the Administrative Authority within ninety days after a notice of cancellation by the guarantor is received by the Administrative Authority from guarantor, guarantor shall provide such alternate financial assurance in the name of [owner or operator].
11. Guarantor expressly waives notice of acceptance of this guarantee by the Administrative Authority or by [owner or operator]. Guarantor also expressly waives notice of amendments or modifications of the closure and/or post-closure plan and of amendments or modifications of the facility permit(s).

I hereby certify that the wording of this guarantee is identical to the wording specified in §20.10h) as such regulations were constituted on the date first above written.

Effective date: _____

[Name of guarantor]

[Authorized signature for guarantor]

[Name of person signing]

[Title of person signing]

Thus sworn and signed before me on this the ____ day of _____, 19__.

NOTARY PUBLIC

- i) Liability endorsement -- A hazardous waste facility liability endorsement as required in §20.8 must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

HAZARDOUS WASTE FACILITY LIABILITY ENDORSEMENT

1. This endorsement certifies that the policy to which the endorsement is attached provides liability insurance covering bodily injury and property damage in connection with the insured's obligation to demonstrate financial responsibility under §20.8f) of the Louisiana Hazardous Waste Regulations (LHWR). The coverage applies at [list Hazardous Waste Facility Identification Number, name, and address for each facility] for [insert "sudden accidental occurrences," and "nonsudden accidental occurrences," or "sudden and nonsudden accidental occurrences," if coverage is for multiple facilities and the coverage is different for different facilities, indicate which facilities are insured for sudden accidental occurrences. which are insured for nonsudden accidental occurrences. and which

are insured for both]. The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's liability], exclusive of legal defense costs.

2. The insurance afforded with respect to such occurrences is subject to all of the terms and conditions of the policy; provided, however, that any provisions of the policy inconsistent with subsections (a) through (e) of this Paragraph 2 are hereby amended to conform with subsections (a) through (e):
 - (a) Bankruptcy or insolvency of the insured shall not relieve the Insurer of its obligations under the policy to which this endorsement is attached.
 - (b) The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the insured for any such payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in §20.8f) of the LHWR.
 - (c) Whenever requested by the Administrative Authority, the Insurer agrees to furnish to the Administrative Authority a signed duplicate original of the policy and all endorsements.
 - (d) Cancellation of this endorsement, whether by the Insurer or the insured, will be effective only upon written notice and only after the expiration of sixty days after a copy of such written notice is received by the Administrative Authority.
 - (e) Any other termination of this endorsement will be effective only upon written notice and only after the expiration of thirty days after a copy of such written notice is received by the Administrative Authority.

Attached to and forming part of policy No. _____ issued by [name of Insurer], herein called the Insurer, of [address of Insurer] to [name of insured] of [address] this _____ day of _____, 19____. The effective date of said policy is _____ day of _____, 19____.

I hereby certify that the wording of this endorsement is identical to the wording specified in §20.10i) of the LHWR as such regulation was constituted on the date first above written, and that the Insurer is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States, and is authorized to conduct business in the State of Louisiana.

[Signature of Authorized Representative of Insurer]
[Type name]
[Title], Authorized Representative of [name of Insurer]
[Address of Representative]

- j) Certificate of insurance -- A certificate of liability insurance as required in §20.8 must be worded as follows, except that the instructions

in brackets are to be replaced with the relevant information and the brackets deleted:

HAZARDOUS WASTE FACILITY CERTIFICATE OF LIABILITY INSURANCE

1. [Name of Insurer], (the "Insurer"), of [address of Insurer] hereby certifies that it has issued liability insurance covering bodily injury and property damage to [name of insured], the (the "insured"), of [address of insured] in connection with the insured's obligation to demonstrate financial responsibility under §20.8 of the Louisiana Hazardous Waste Regulations (LHWR). The coverage applies at [list Hazardous Waste Facility Identification Number, name, and address for each facility] for [insert "sudden accidental occurrences," "nonsudden accidental occurrences," or "sudden and nonsudden accidental occurrences"; if coverage is for multiple facilities and the coverage is different for different facilities, indicate which facilities are insured for sudden accidental occurrences, which are insured for nonsudden accidental occurrences, and which are insured for both]. The limits of liability are [insert the dollar amount of "each occurrence" and "annual aggregate" limits of the Insurer's liability], exclusive of legal defense costs. The coverage is provided under policy number _____, issued on [date]. The effective date of said policy is [date].
2. The Insurer further certifies the following with respect to the insurance described in Paragraph 1:
 - (a) Bankruptcy or insolvency of the insured shall not relieve the Insurer of its obligations under the policy.
 - (b) The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the insured for any such payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in §20.8f) of the LHWR.
 - (c) Whenever requested by the Administrative Authority, the Insurer agrees to furnish to the Administrative Authority a signed duplicate original of the policy and all endorsements.
 - (d) Cancellation of the insurance, whether by the Insurer or the insured, will be effective only upon written notice and only after the expiration of sixty days after a copy of such written notice is received by the Administrative Authority.
 - (e) Any other termination of the insurance will be effective only upon written notice and only after the expiration of thirty days after a copy of such written notice is received by the Administrative Authority.

I hereby certify that the wording of this instrument is identical to the wording specified in §20.10j) of the LHWR as such regulation was constituted on the date first above written, and that the Insurer is licensed to transact

the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States, and is authorized to conduct insurance business in the State of Louisiana.

[Signature of authorized representative of Insurer]

[Type name]

[Title], Authorized Representative of [name of Insurer]

[Address of Representative]

CHAPTER 21

SMALL QUANTITY GENERATORS

- 21.1 Applicability -- Small quantity generators are subject to all the requirements of these regulations unless they are granted an exemption under this Chapter.
- 21.2 Quantitative limit -- A generator is a small quantity generator for the calendar month, if he generates less than 1000 kilograms of hazardous waste in that month except as specified in §21.6.
- 21.3 Petition for exemption -- Except for those wastes identified in §§21.6 and 21.7, a small quantity generator may petition the Administrative Authority for an exemption from the requirements of Chapter 7, provided the generator complies with the requirements of §21.8 of this section.
- 21.4 Reuse or recycle -- Hazardous waste that is beneficially used, or re-used, legitimately recycled or reclaimed, and that is exempt from regulation by §22.1, is not included in the quantity determinations of this section, and is not subject to any requirements of this section. Hazardous waste that is subject to the special requirements of §22.1d) is included in the quantity determinations of this section and is subject to the requirements of this section.
- 21.5 Exemptions -- In determining the quantity of hazardous waste he generates, a generator need not include:
- a) His hazardous waste when it is removed from on-site storage; or
 - b) Hazardous waste produced by on-site treatment of his hazardous waste.
- 21.6 Acutely hazardous wastes -- If a small quantity generator generates acutely hazardous waste [see §24.1c)5)] in a calendar month in quantities greater than set forth below, all quantities of that acutely hazardous waste are subject to these regulations:
- a) A total of one kilogram of commercial chemical products and manufacturing chemical intermediates having the generic names listed in §§24.1d) and 24.1e) or off-specification commercial chemical products and manufacturing chemical intermediates which, if they met specifications, would have the generic names listed in §§24.1d) and 24.1e).
 - b) A total of 100 kilograms of any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill, into or on any land or water, of any commercial chemical products or manufacturing chemical intermediates or any off-specification commercial chemical products or

manufacturing chemical intermediates which if they met specifications, would have the generic names listed in §§24.1c)5) and 24.1c)6).

- 21.7 Accumulation time -- A small quantity generator may accumulate hazardous waste on-site. If he accumulates at any time more than a total of 1000 kilograms of his hazardous waste, or his acutely hazardous wastes in quantities greater than set forth in §21.6 all of those accumulated wastes for which the accumulation limit was exceeded are subject to these regulations. The time period of §7.5e) for accumulation of wastes on site begins for a small quantity generator when the accumulated wastes exceed the applicable exemption level.
- 21.8 Exemption requirements -- In order for hazardous waste generated by a small quantity generator to be exempt from the full requirements of these regulations the generator must:
- a) Comply with §7.2;
 - b) Store hazardous waste on site in compliance with the requirements of §21.7; and
 - c) 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 is:
 - 1) Permitted under these regulations;
 - 2) In interim status under these regulations;
 - 3) Authorized to manage hazardous waste by a state with a hazardous waste management program approved by the U.S. EPA;
 - 4) Permitted, licensed, or registered by a state to manage municipal or industrial solid waste; or
 - 5) A facility which:

Beneficially uses or re-uses, or legitimately recycles or reclaims his waste; or

Treats his waste prior to beneficial use or re-use or legitimate recycling or reclamation.
- 21.9 Hazardous waste subject to the reduced requirements of this section may be mixed with non-hazardous waste and remain subject to these reduced requirements even though the resultant mixture exceeds the quantity limitations identified in this section, unless the mixture meets any of the characteristics of hazardous wastes identified in §24.2.
- If a small quantity generator mixes a hazardous waste that exceeds the quantity exemption level of this section with a solid waste, the mixture is subject to full regulation.

CHAPTER 22
REUSABLE MATERIALS

22.1 Applicability

- a) A reusable material is only subject to the regulations in this Chapter and as specifically referred to in other sections herein.
- b) A material which is used for a purpose for which it was manufactured or produced is not a reusable material for purposes of this Chapter.
- c) Characteristic wastes (§24.2) which are used or reused on-site or stored at the generator site, prior to such use or reuse are exempt from these regulations, except that on-site storage shall be in an environmentally sound manner.
- d) "Upon transport of a reusable material from the generation site and out of the direct control of the generator, the owner of the reusable material shall notify the Administrative Authority within twenty-four (24) hours of any determination that the material shall not be used or re-used." Following such a determination the reusable material becomes a hazardous waste and is fully subject to all requirements of these regulations as a hazardous waste.
- e) Upon determination by the generator that any material held for use or reuse is to be discarded, such material shall become a hazardous waste, if so defined in Chapter 24, and shall be handled as required in these regulations.

22.2 Notification -- All operators of facilities which generate, transport, treat, store, or utilize a reusable material shall notify the Department within ninety days of promulgation of these rules and regulations that they are engaged in activities involving a reusable material as defined in Chapter 2. For notification, the operator may obtain notification forms from the Department.

22.3 Manifest forms

- a) A special reusable material manifest form containing the information required by this Chapter shall be used for all offsite shipments, except by pipeline, of reusable materials.
- b) Failure to utilize the reusable material manifest form for shipments of reusable materials shall be a violation of these rules and regulations.

- c) Characteristic wastes (§24.2) may be shipped off-site without use of the reusable material manifest provided that a shipping paper is used that provides the identify of the generator, reuse facility, and the material and quantity involved. Such shipping papers must otherwise meet the requirements of this Chapter.
- d) Reusable material in quantities which would be subject to a small generator exemption may be collected and manifested on a trip ticket listing with the manifesting requirements fulfilled by the transporter. The listing shall show the identification of the transporter and reuse facility with a listing of the waste collected by identification, quantity, and source, on a form available from the Administrative Authority.

22.4 Manifest document flow

- a) The generator initiates the manifest (original and three copies) by filling out his portion and the name and address of the reuse facility that will receive the reusable material. After the transporter fills out and signs his portion, the generator retains one copy for his files, and the original and two copies accompany the reusable material shipment.
- b) The transporter secures the signature of the operator of the facility that will receive the reusable material upon delivery of the reusable material. The transporter retains one copy for his files and gives the original and one copy to the facility operator.
- c) The facility operator fills out his portion, retains a copy for his files, and mails the original to the generator no later than five working days thereafter.
- d) If a reuse facility refuses to accept a reusable material for use, the facility operator must notify the Department immediately and provide the following information:
 - 1) Name of the person reporting the refusal and phone number for that person;
 - 2) Name and address of the transporter;
 - 3) Name and address of the generator;
 - 4) Name and address of the reuse facility operator;
 - 5) Date, time, and place of the refusal;
 - 6) Description of the incident; and
 - 7) Classification, name, and amount of reusable material, to the extent available.
- e) The signing of the manifest by the generator, transporter, or facility operator certifies that to the best of his knowledge his portion of the

manifest is accurately and correctly filled out. The generator further certifies that the material is properly packaged, marked and labeled and is in the proper container for transportation, as detailed in §7.5.

- f) The generator, transporter, and facility operator are required to report to the Department any irregularities between the materials actually received and the materials described on the manifest, or any other irregularities, within five days.
- g) For rail shipments, the generator may comply with the requirements of §§7.4d)4) and 7.4d)5).

22.5 Procedures governing the generator's portion of the manifest system

- a) Generators of reusable material shall use the reusable material manifest as required by §22.3.
- b) In naming a reusable material, a generator shall use the nomenclature for the material which otherwise would be required under these regulations if the material were classified as a hazardous waste. Such description of the material shall be used on the reusable material manifest and in all reports on the material required under this Chapter.
- c) A single manifest may be used for multiple loads of reusable material, provided that:
 - 1) All loads of reusable material are shipped on the same day from the same location by the same transporter to the same facility;
 - 2) All loads are accompanied by a copy of the manifest and emergency information as required by §22.5d);
 - 3) The reusable material in all loads has the same shipping description and hazard class;
 - 4) The total quantity of each load is specified and is initialed by the generator and transporter; and
 - 5) The operator of the transport vehicle for each load is listed on the manifest.
- d) Generators must provide a Chem-Card or similar emergency card or a statement concerning the hazardous nature of the material and general guidelines for an emergency situation involving the reusable material to accompany the manifest on shipments and loads.
- e) In naming a reusable material, a generator shall:
 - 1) Use the proper Department of Transportation (DOT) shipping name (identified in 49 CFR 172);

- 2) If the DOT proper shipping name is "NOT OTHERWISE SPECIFIED" (NOS), then the classification system of §1.3b) shall be used after the DOT proper shipping name, "NOS".
- f) If the reusable material is to be transported out of state, the generator will be responsible for receiving the completed, signed manifest from the out-of-state facility.
- g) Generators must obtain written confirmation of the acceptability of the type of reusable material from the operator of the facility where the material will be used or stored prior to use, before shipping the reusable material.

22.6 Procedures governing the transporter's portion of the manifest system

- a) Transporters will pick up and ship only those reusable materials which are properly prepared for shipment, are accompanied by a properly completed manifest, and appear to be the reusable material described on the manifest.
- b) Transporters who pick up reusable material from generators exempted by §1.3d) are responsible for the generator manifest requirements of this section. Transporters may use a single manifest for shipments containing reusable material from several generators if all generators are listed, all reusable materials are accurately described, the materials transported in the same shipment are compatible, and the material is labeled as required in this section by transportation regulations for hazardous materials promulgated by the Louisiana Department of Public Safety.
- c) If the facility rejects a shipment of reusable material, the transporter shall return it to the generator, notify the Department of the action immediately, and give reasons to his best understanding why the material was rejected.

22.7 Procedures governing the portion of the manifest system for the reuse facility

- a) The operator of a facility accepting out-of-state wastes is responsible for all the requirements of this section, including requiring the generator to initiate a manifest.
- b) Only those reusable materials which are properly manifested and properly shipped are to be accepted by the operator of the facility.
- c) If the operator of the facility rejects any reusable material he is to notify the Department immediately and give reasons for the rejection.
- d) The operator of any facility that uses or stores a reusable material will assume all the responsibilities of a generator established by these regulations for any reusable material transported from his facility to another facility, except for material rejected under §22.6c).

22.8 Storage

- a) All storage of reusable material shall be in containers or tanks meeting the applicable standards of §§12.2, 12.3, 12.4, 12.5a), 12.6, and 12.7, 11.2a) through 11.2d), 11.4, and 11.5, where practical. When it is impractical to store a reusable material in containers or tanks, alternate storage acceptable to the Administrative Authority shall be provided by the owner of the material. The storage must be in a manner which will prevent any release of the materials or constituents that would endanger the public health or the environment.

22.9 Recordkeeping

- a) Generators, transporters, and reuse facilities, that handle reusable materials shall maintain the required manifests, annual reports, and exception reports for a period of three years.
- b) An annual report shall be submitted by generators of reusable materials and reuse facilities. The reports shall be submitted by March 1 after the end of the calendar year and shall include:
 - 1) Manifest numbers;
 - 2) Materials handled;
 - 3) Quantities;
 - 4) Physical state; and
 - 5) For the reusable material facility, the final utilization or disposition of the reusable materials.

22.10 Spills

- a) Any spill of reusable material which could possibly endanger human health or adversely affect the environment shall be reported to the Department as provided in the "Notification Regulations and Procedures for Unauthorized Discharges and Spills."
- b) If a spill occurs on the site of a generator or a reuse facility that handles reusable materials and that spill could endanger the public health or affect the environment offsite, the Department and the Department of Public Safety have the authority to enter the site and investigate the spill.
- c) Owners of the spilled material are considered to be generators for the purposes of these regulations. In an emergency situation, all reporting and manifest requirements of these rules and regulations for generators may be suspended. However, the owners of the material must submit a full report on the spill, including location of spill, type of material spilled, cause of spill, amount of spilled material, damages incurred, and how the spilled material was cleaned up, transported, and disposed of. This

report shall be forwarded to the Department no later than twenty days following the spill.

- d) Whenever a spill of reusable material occurs that requires immediate removal to protect human health or the environment, the transporter shall immediately notify the Department as required by the "Notification Regulations and Procedures for Unauthorized Discharges and Spills."
- e) The generator, transporter, reuse facility, or user shall clean up all of the spilled material or take such action as may be required pursuant to the Emergency Response System so that the spilled material no longer presents a hazard to human health or the environment.

22.11 Violations

- a) No person shall accept any reusable material unless delivered with a properly completed reusable material manifest as required by §22.3 or under an Emergency Action Authorization pursuant to §5.1.
- b) No person shall dispose of a reusable material except by bonafide use, reuse, recycling, or reclamation or by treatment, storage, or disposal as a hazardous waste in accordance with the LHW.

22.12 Personnel training -- All generators shall institute a personnel training program covering all portions of the facility that handle reusable material. (The training program should include the information specified in §9.8.)

22.13 Contingency plan -- Each generator shall prepare a contingency plan. (The contingency plan should include the information as specified in §§9.7a), 9.7b), 9.7c), 9.7d)2), 9.7f), and 9.7g).)

CHAPTER 23
INTERIM STATUS

23.1 Purpose and applicability

- a) The purpose of interim status is to allow existing facilities to operate in an appropriate and responsible manner during the period of time required to process and review permit applications. Interim status facilities must, when required by the Administrative Authority, submit a permit application in compliance with the requirements of these regulations. Failure to submit an application is a violation of interim status and will result in revocation of a facility's interim status designation. Once revoked the facility will be treated as an unpermitted facility and appropriate legal action will be taken.
- b) Interim status is applicable to all facilities that have met the requirements established by Section 3005e of the Resource Conservation and Recovery Act et seq., and such has been recognized by the U.S. Environmental Protection Agency (EPA) and approved by the Administrative Authority in accordance with the Louisiana Environmental Affairs Act.
- c) Hazardous waste management facilities with interim status are treated as a facility with an interim permit until a final determination is made on the entire permit application.
- d) Facilities having interim status are subject to all applicable federal and state laws and regulations, including these Regulations.
- e) This Chapter applies only to interim status facilities.

23.2 Requirements for interim status -- Chapters 1, 2, 3, 4, 21, 22, and 24 also apply to Interim status facilities.

23.3 End of the interim status period -- The Administrative Authority shall set a date for the submission of Part II of the application, with at least six months notice. When a final determination is made on the entire permit application (Part I and Part II), a final permit shall be required and interim status will no longer be applicable. The permit will be based on the technical facility standards established by these Regulations.

Subchapter I
General Facility Standards

- 23.4 Applicability -- The regulations of this subchapter apply to owners and operators of all hazardous waste facilities except as 1.3d) provides otherwise.
- 23.5 Identification number -- Every facility owner or operator must apply to EPA for an EPA identification number in accordance with the EPA notification procedures.
- 23.6 Required notices -- Interim status facilities must comply with §§9.14a), 9.14f), and 9.16.
- 23.7 General waste analysis -- Interim status facilities must comply with §9.10.
- 23.8 Security
- 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 his facility, unless:
 - 1) Physical contact with the waste, structures, or equipment with the active portion of the facility will not injure unknowing or unauthorized persons or livestock which may enter the active portion of a facility, and
 - 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 Part.
 - b) Unless exempt under §§23.8a)1) and 23.8a)2), a facility must have:
 - 1) A 24-hour surveillance system (e.g., television monitoring or surveillance by guards of facility personnel) which continuously monitors and controls entry onto the active portion of the facility; or
 - 2) A barrier and a means to control entry as follows:

An artificial or natural barrier (e.g., a fence in good repair or a fence combined with a cliff), which completely surrounds the active portion of the facility; and

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).
 - c) The requirements of §23.8b) 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 §23.8b)1) or §23.8b)2).

- d) Unless exempt under §§23.8a)1) and 23.8a)2), 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 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.

23.9 General inspection requirements -- Interim status facilities must comply with §9.5.

23.10 Personnel training -- Interim status facilities must comply with §9.8.

23.11 General requirements for ignitable, reactive, or incompatible wastes

- a) Interim status facilities must comply with §§9.9a), 9.9c), 9.9d), 9.9e), and 9.9f).
- b) The treatment, storage, or disposal of ignitable or reactive waste, and the mixture or commingling of incompatible wastes, or incompatible wastes and materials, must be conducted so that it does not:
 - 1) Generate extreme heat or pressure, fire or explosion, or violent reaction;
 - 2) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health;
 - 3) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;
 - 4) Damage the structural integrity of the device or facility containing the waste; or
 - 5) Through any like methods threaten human health or the environment.

Subchapter II Preparedness and Prevention

23.12 Applicability -- Interim status facilities must comply with §9.6.

23.13 Maintenance and operation of facility -- Facilities must be maintained and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

- 23.14 Required equipment -- Interim status facilities must comply with §9.6c).
- 23.15 Testing and maintenance of equipment -- Interim status facilities must comply with §9.6d).
- 23.16 Access to communications or alarm systems -- Interim status facilities must comply with §9.6e).
- 23.17 Required aisle space -- Interim status facilities must comply with §9.6f).
- 23.18 Arrangements with local authorities -- Interim status facilities must comply with §9.6g).

Subchapter III Contingency Plan and Emergency Procedures

- 23.19 Applicability -- The regulations of this subchapter apply to owners and operators of all hazardous waste facilities except as provided in §1.3d).
- 23.20 Purpose and implementation of contingency plan -- Interim status facilities must comply with §9.7b).
- 23.21 Content of contingency plan -- Interim status facilities must comply with §9.7c).
- 23.22 Copies of contingency plan -- Interim status facilities must comply with §9.7d)2).
- 23.23 Amendment of contingency plan

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

 - a) Applicable regulations are revised;
 - b) The plan fails in an emergency;
 - 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;
 - d) The list of emergency coordinators changes; or
 - e) The list of emergency equipment changes.
- 23.24 Emergency coordinator -- Interim status facilities must comply with §9.7f).
- 23.25 Emergency procedures -- Interim status facilities must comply with §9.7g).

Subchapter IV
Manifest System, Recordkeeping, and Reporting

23.26 Applicability

The regulations in this Subchapter apply to owners and operators of both on-site and off-site facilities, except as §1.3d) provides otherwise. Sections 23.27, 23.28, and 23.32 do not apply to owners and operators of on-site facilities that do not receive any hazardous waste from off-site sources.

23.27 Use of the manifest system -- Interim status facilities must comply with §6.3.

23.28 Manifest discrepancies -- Interim status facilities must comply with §6.4.

23.29 Operating record

- a) The owner or operator must keep a written operating record at his facility.
- b) The following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility:
 - 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 §9.15b);
 - 2) The location of each hazardous waste within the facility and the quantity at each location. For disposal facilities, the location and quantity of each hazardous waste must be recorded on a map or diagram of each cell or disposal area. For all facilities, this information must include cross-references to specific manifest document numbers, if the waste was accompanied by a manifest;
 - 3) Records and results of waste analysis and trial tests performed as specified in §§23.7, 23.68, 23.77, 23.84, 23.91, 23.108, 23.114, 23.120.
 - 4) Summary reports and details of all incidents that require implementing the contingency plan as specified in §9.7g)10).
 - 5) Records and results of inspections as required by §9.5d) (except these data need be kept only three years);
 - 6) Monitoring, testing, or analytical data where required by §§23.34, 23.38, 23.92, 23.93, 23.95d)1), 23.110, and 23.115.
 - 7) All closure cost estimates under §23.51 and, for disposal facilities, all post-closure cost estimates under §23.53.

23.30 Availability, retention, and disposition of records -- Interim status facilities must comply with §9.15c).

23.31 Annual report -- Interim status facilities must comply with §9.15d).

23.32 Unmanifested waste report -- Interim status facilities must comply with §6.5.

23.33 Additional reports

In addition to submitting the biennial report and unmanifested waste reports described in §§23.31 and 23.32, the owner or operator must also report to the Administrative Authority:

- a) Releases, fires, and explosions as specified in §9.7g)10);
- b) Groundwater contamination and monitoring data as specified in §§23.37 and 23.38; and
- c) Facility closure as specified in §23.44.

Subchapter V Groundwater Monitoring

23.34 Applicability -- Facilities that have interim status must comply with this Subchapter in lieu of Chapter 18.

- a) The owner or operator of a surface impoundment, landfill, or land treatment facility, which is used to manage hazardous waste, must implement a groundwater monitoring program capable of determining the facility's impact on the quality of groundwater in the uppermost aquifer underlying the facility, except as §§1.3c), and 1.3d) provide otherwise.
- b) Except as §§23.34c) and 23.34d) provide otherwise, the owner or operator must install, operate, and maintain a groundwater monitoring system which meets the requirements of §23.35 and must comply with §§23.36, 23.37, and 23.38. This groundwater monitoring program must be carried out during the active life of the facility, and for disposal facilities, during the post-closure care period as well.
- c) If an owner or operator assumes (or knows) that groundwater monitoring of indicator parameters, in accordance with §§23.35 and 23.36, would show statistically significant increases (or decreases in the case of pH) when evaluated under §23.37b)2), he may, install, operate, and maintain an alternate groundwater monitoring system (other than the one described in §§23.37 and 23.36). If the owner or operator decides to use an alternate groundwater monitoring system he must:
 - 1) Submit to the Administrative Authority a specific plan, certified by a qualified geologist or geotechnical engineer, which satisfies the requirements of §23.37g), for an alternate groundwater monitoring system;
 - 2) Initiate the determinations specified in §23.37h);

- 3) Prepare and submit a written report in accordance with §23.37i);
 - 4) Continue to make the determinations specified in 23.37h) on a quarterly basis until final closure of the facility; and
 - 5) Comply with the recordkeeping and report requirements in §23.38b).
- d) The groundwater monitoring requirements of this Subchapter may be waived with respect to any surface impoundment that is used to neutralize wastes which are hazardous solely because they exhibit the corrosivity characteristic under §24.2b) or are listed as hazardous wastes in §24.1 only for the reason that they are corrosive and the surface impoundment contains no other hazardous wastes, if the owner or operator can demonstrate that there is no potential for migration of hazardous wastes from the impoundment. The demonstration must establish, based upon consideration of the characteristics of the wastes and the impoundment, that the corrosive wastes will be neutralized to the extent that they no longer meet the corrosivity characteristic before they can migrate out of the impoundment. The demonstration must be in writing and must be certified by a qualified professional and must be approved by the Administrative Authority.

23.35 Groundwater monitoring system

- a) A groundwater monitoring system must be capable of yielding groundwater samples for analysis and must consist of:
 - 1) Monitoring wells (at least one) installed hydraulically upgradient (i.e., in the direction of increasing static head) from the limit of the waste management area. Their number, locations, and depths must be sufficient to yield groundwater samples that are:

Representative of background groundwater quality in the uppermost aquifer near the facility; and

Not affected by the facility; and
 - 2) Monitoring wells (at least three) installed hydraulically downgradient (i.e., in the direction of decreasing static head) at the limit of the waste management area. Their number, locations, and depths must ensure that they immediately detect any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer.
- b) Separate monitoring systems for each waste management component of a facility are not required provided that provisions for sampling upgradient and downgradient water quality will detect any discharge from the waste management area.
 - 1) In the case of a facility consisting of only one surface impoundment, landfill, or land treatment area, the waste management area is described by the waste boundary (perimeter).

- 2) In the case of a facility consisting of more than one surface impoundment, landfill, or land treatment area, the waste management area is described by an imaginary boundary line which circumscribes the several waste management components.
- c) All monitoring wells must be cased in a manner that maintains the integrity of the monitoring well bore hole. This casing must be screened or perforated, and packed with gravel or sand where necessary, to enable sample collection at depths where appropriate aquifer flow zones exist. The annular space (i.e., the space between the bore hole and well casing) above the sampling depth must be sealed with a suitable material (e.g., cement grout or bentonite slurry) to prevent contamination of samples and the groundwater.

23.36 Sampling and analysis

- a) The owner or operator must obtain and analyze samples from the installed groundwater monitoring system. The owner or operator must develop and follow a groundwater sampling and analysis plan. He must keep this plan at the facility. The plan must be approved by the Administrative Authority and must include procedures and techniques for:
 - 1) Sample collection;
 - 2) Sample preservation and shipment;
 - 3) Analytical procedures; and
 - 4) Chain of custody control.
- b) The owner or operator must determine the concentration or value of the following parameters in groundwater samples in accordance with §§23.36c) and 23.36d):
 - 1) Parameters characterizing the suitability of the groundwater as a drinking water supply, as follows:

Parameter	Maximum level (mg/l unless otherwise stated)
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium	0.05
Fluoride	1.4-2.4
Lead	0.05
Mercury	0.002
Nitrate (as N)	10
Selenium	0.01
Silver	0.05
Endrin	0.0002
Lindane	0.004
Methoxychlor	0.1
Toxaphene	0.005

Parameter	Maximum level (mg/l unless otherwise stated)
2-4D	0.1
2,4,5-TP silver	0.01
Radium	5 pCi/l
Gross Alpha	15 pCi/l
Gross Beta	4 millirem/yr
*Turbidity	1/TU
Coliform bacteria	1/100 ml

* Turbidity is applicable only to surface water supplies.

- 2) The following parameters are to be used as a basis for comparison in the event a groundwater quality assessment is required under §23.37d).

Chloride;
Iron;
Phenols;
Sulfate;

- 3) Parameters used as indicators of groundwater contamination:

pH;
Specific Conductance;
Total Organic Carbon; and
Total Organic Halogen.

- c) For all monitoring wells, the owner or operator must establish initial background concentrations or values of all parameters as specified in §23.36b) quarterly for one year.
- d) For each of the indicator parameters specified in §23.36b)3), at least four replicate measurements must be obtained for each sample and the initial background arithmetic mean and variance must be determined by pooling the replicate measurements for the respective parameter concentrations or values in samples obtained from upgradient wells during the first year.
- e) After the first year, all monitoring wells must be sampled and the samples analyzed with the following frequencies:
- 1) At least annually, samples must be collected to establish groundwater quality and analyzed for the parameters specified in §23.36b)2); and
 - 2) At least semi-annually samples must be collected to indicate groundwater contamination and analyzed for the parameters specified in §23.36b)3).
 - 3) The Administrative Authority may require the owner or operator to analyze for specific indicator parameters on a more frequent schedule.

- f) Elevation of the groundwater surface at each monitoring well must be determined each time a sample is obtained.

23.37 Preparation, evaluation, and response

- 265.93(a)
- a) The owner or operator must have an outline of a groundwater quality assessment program. The outline must describe a more comprehensive groundwater monitoring program (than that described in §§23.35 and 23.36) capable of determining:
- 1) Whether hazardous waste or hazardous waste constituents have entered the groundwater;
 - 2) The rate and extent of migration of hazardous waste or hazardous waste constituents in the groundwater; and
 - 3) The concentrations of hazardous waste or hazardous waste constituents in the ground water.
- (b) b) For each indicator parameter specified in §23.36b)3), the owner or operator must calculate the arithmetic mean and variance, based on at least four replicate measurements on each sample, for each well monitored in accordance with §23.36e)2), and compare these results with its initial background arithmetic mean. The comparison must consider, individually, each of the wells in the monitoring system, and must use the Student's t-test at the 0.01 level of significance (see Chapter 18, Table 1) to determine statistically significant increases (and decreases in the case of pH) over initial background.
- (cX1) c) If the comparisons for the upgradient wells made under §23.37b) show a significant increase (or decrease in pH), the owner or operator must submit this information in accordance with §23.38a)2)
- (cX2) d) If the comparison for downgradient wells made under §23.37b) shows a significant increase (or decrease in pH), the owner or operator must then immediately obtain additional groundwater samples from those downgradient wells where a significant difference was detected, split the samples in two, and obtain analyses of all additional samples to determine whether the significant difference was a result of laboratory error.
- (dX1) e) If the analyses performed under §23.37) confirm the significant increase (or pH decrease), the owner or operator must provide written notice to the Administrative Authority, within seven days of the date of such confirmation, that the facility may be affecting groundwater quality.
- (dX2) f) Within 15 days after the notification under §23.37e), the owner or operator must develop and submit to the Administrative Authority a specific plan, based on the outline required under §23.37a) and certified by a qualified geologist or geotechnical engineer, for a groundwater quality assessment program at the facility.
- (dX3) g) The plan to be submitted under §23.34c)1) or §23.37f) must specify:

- 1) The number, location, and depth of wells;
- 2) Sampling and analytical methods for those hazardous wastes or hazardous waste constituents in the facility;
- 3) Evaluation procedures, including any use of previously-gathered groundwater quality information; and
- 4) A schedule of implementation.

(d)(4)

h) The owner or operator must implement the groundwater quality assessment plan which satisfies the requirements of §23.37g), and, at a minimum, determine:

- 1) The rate and extent of migration of the hazardous waste or hazardous waste constituents in the ground water; and
- 2) The concentrations of the hazardous waste or hazardous waste constituents in the groundwater.

(d)(5)

i) The owner or operator must make his first determination under §23.37h) as soon as technically feasible, and, within fifteen days after that determination, submit to the Administrative Authority a written report containing an assessment of the groundwater quality.

(d)(6)

j) If the owner or operator determines, based on the results of the first determination under §23.37h), that no hazardous waste or hazardous waste constituents from the facility have entered the groundwater, then he may reinstate the indicator evaluation program described in §§23.36 and 23.37b). If the owner or operator reinstates the indicator evaluation program, he must notify the Administrative Authority in the report submitted under §23.37i).

Not in Federal

k) Notwithstanding any other provision of this Chapter, the Administrative Authority may order such corrective action measures as may be necessary for groundwater protection. When it is determined, based on the groundwater quality assessment plan, that hazardous waste or hazardous waste constituents from the facility have entered the groundwater, the Administrative Authority shall establish a groundwater protection standard including:

- 1) A list of hazardous constituents; concentration limits; the compliance points; and the compliance period.
- 2) Within thirty days or other schedule required by the Administrative Authority, after the establishment of the groundwater protection standard, the owner or operator shall submit a corrective action and monitoring plan.
- 3) Within a reasonable time set by the Administrative Authority, corrective action measures shall be instituted by the owner or operator that prevents hazardous constituents from exceeding their respective

concentration limits at the compliance point by removing the hazardous waste constituents or treating them in place.

- (e) 1) Notwithstanding any other provision of this Subchapter, any groundwater quality assessment to satisfy the requirements of §23.37h), which is initiated prior to final closure of the facility, must be completed and reported in accordance with §23.37i).
- (f) m) Unless the groundwater is monitored to satisfy the requirements of §23.37h), the owner or operator must evaluate the data on groundwater surface elevations obtained under §23.36f) at least annually to determine whether the requirements under §23.35a) for locating the monitoring wells continue to be satisfied. If the evaluation shows that §23.35a) is no longer satisfied, the owner or operator must immediately modify the number, location, or depth of the monitoring wells to bring the groundwater monitoring system into compliance with this requirement.

23.38 Recordkeeping and reporting

- a) Unless the groundwater is monitored to satisfy the requirements of §23.37h), the owner or operator must:
 - 1) Keep records of the analyses required in §§23.36c) and e), the associated groundwater surface elevations required in §23.35f), and the evaluations required in §23.37b) throughout the active life of the facility, and, for disposal facilities, throughout the post-closure care period as well; and
 - 2) Report the following groundwater monitoring information to the Administrative Authority:

During the first year when initial background concentrations are being established for the facility, concentrations or values of the parameters listed in §23.36b)1) for each groundwater monitoring well within fifteen days after completing each quarterly analysis. The owner or operator must separately identify for each monitoring well any parameters whose concentration or value has been found to exceed the maximum contaminant levels listed in §23.36b)1).

Annually, concentrations or values of the parameters listed in §23.36b)3) for each groundwater monitoring well, along with the required evaluations for these parameters under §23.37b). The owner or operator must separately identify any significant differences from initial background found in the upgradient wells, in accordance with §23.37c). During the active life of the facility, this information must be submitted no later than March 1 following each calendar year; and

No later than March 1 following each calendar year, results of the evaluations of groundwater surface elevations under §23.37m), and a description of the response to that evaluation, where applicable.

- b) If the groundwater is monitored to satisfy the requirements of §23.37h), the owner or operator must:
 - 1) Keep records of the analyses and evaluations specified in the plan, which satisfies the requirements of §23.37g), throughout the active life of the facility, and, for disposal facilities, throughout the post-closure care period as well; and
 - 2) Annually, until final closure of the facility, submit to the Administrative Authority a report containing the results of his or her groundwater quality assessment program which includes, but is not limited to, the calculated (or measured) rate of migration of hazardous waste or hazardous waste constituents in the groundwater during the reporting period. This information must be submitted no later than March 1 following each calendar year.

Subchapter VI
Closure and Post-closure

23.39 Applicability -- Except as §1.3d) provides otherwise:

- a) Sections 23.40 through 23.44 (which concern closure) apply to the owners and operators of all hazardous waste management facilities; and
- b) Sections 23.45 through 23.48 (which concern post-closure care) apply to the owners and operators of all hazardous waste disposal facilities.

23.40 Closure performance standard -- The owner or operator must close his facility in a manner that:

- a) Minimizes the need for further maintenance, and
- 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 rainfall, or waste decomposition products to the ground or surface waters or to the atmosphere.

23.41 Closure plan; amendment of plan

- a) The owner or operator must have a written closure plan. He must keep a copy of the closure plan and all revisions to the plan at the facility until closure is completed and certified in accordance with §23.44. This plan must identify the steps necessary to completely or partially close the facility at any point during its intended operating life and to completely close the facility at the end of its intended operating life. The closure plan must include, at least, the requirements of §§19.6a)1) through 19.6a)4).
- b) The owner or operator may amend his closure plan at any time during the active life of the facility. (The active life of the facility is that

period during which wastes are periodically received.) The owner or operator must amend the plan whenever changes in operating plans or facility design affect the closure plan, or whenever there is a change in the expected year of closure of the facility. The plan must be amended within 60 days of the changes.

- c) The owner or operator of a disposal facility must submit his closure plan to the Administrative Authority at least 180 days before the date he expects to begin closure. The date when he "expects to begin closure" should be immediately after the date on which he expects to receive the final volume of wastes. The owner or operator must submit his closure plan to the Administrative Authority no later than fifteen days after:
 - 1) Termination of interim status (except when a permit is issued to the facility simultaneously with the termination of interim status); or
 - 2) Issuance of a judicial decree or compliance order under the Act to cease receiving wastes or close.
- d) The Administrative Authority will provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments on the plan and request modifications of the plan within thirty days of the date of the notice. He will also, in response to a request or at his own discretion, hold a public hearing whenever such a hearing might clarify one or more issues concerning a closure plan. The Administrative Authority will give public notice of the hearing at least thirty days before it occurs. (Public notice of the hearing may be given at the same time as notice of the opportunity for the public to submit written comments, and the two notices may be combined.) The Administrative Authority will approve, modify, or disapprove the plan within ninety days of its receipt. If the Administrative Authority does not approve the plan, the owner or operator must modify the plan or submit a new plan for approval within thirty days. The Administrative Authority's decision must assure that the approved closure plan is consistent with §§23.40, 23.42 and 23.43 and the applicable requirements of §§23.71, 23.79, 23.95, 23.101, 23.111, 23.116, and 23.122. A copy of this modified plan must be mailed to the owner or operator.

23.42 Time allowed for closure

- a) Within ninety days after receiving the final volume of hazardous waste, or ninety days after approval of the closure plan, whichever comes later, the owner or operator must treat, remove from the site, or dispose of on-site all hazardous wastes in accordance with the approved closure plan. The Administrative Authority may approve a longer period using the procedures under §23.39c) if the owner or operator demonstrates that:
 - 1) Either the activities required to comply with this paragraph will, of necessity, take him longer than ninety days to complete; or the following:

The facility has the capacity to receive additional wastes;

There is a reasonable likelihood that a person other than the owner or operator will recommence operation of the site;

Closure of the facility would be incompatible with continued operation of the site; and

- 2) He has taken and will continue to take all steps to prevent threats to human health and the environment.
- b) The owner or operator must complete closure activities in accordance with the approved closure plan and within 180 days after receiving the final volume of wastes or 180 days after approval of the closure plan, whichever comes later. The Administrative Authority may approve a longer closure period using the procedures under §23.39c) if the owner or operator demonstrates that:

- 1) Either the closure activities will, of necessity, take him longer than 180 days to complete; or the following:

The facility has the capacity to receive additional waste;

There is a reasonable likelihood that a person other than the owner or operator will recommence operation of the site;

Closure of the facility would be incompatible with continued operation of the site; and

- 2) He has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed but inactive facility.
- c) Under §§23.42a)1) and 23.42b)1), if operation of the facility is recommenced, the Administrative Authority may defer completion of closure activities until the new operation is terminated.

23.43 Disposal or decontamination of equipment

When closure is completed, all facility equipment and structures must have been properly disposed of or decontaminated by removing all hazardous waste and residues.

23.44 Certification of closure

When closure is completed, the owner or operator must submit to the Administrative Authority certification both by the owner or operator and by an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan.

23.45 Post-closure care and use of property

- a) Post-closure care must continue for 30 years after the date of completing closure and must consist of at least the following:

- 1) Groundwater monitoring and reporting in accordance with the requirements of Subchapter V, and
 - 2) Maintenance of monitoring and waste containment systems as specified in §§23.35, 23.76, 23.79, 23.95, and 23.101, where applicable.
- b) Using the procedures of §23.46c), the Administrative Authority may require continuation of any of the security requirements of §23.8 for 30 years after the date closure has been completed when:
- 1) There is a possibility that wastes may become exposed after completion of closure; or
 - 2) Access by the public or domestic livestock may pose a hazard to human health.
- 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 owner or operator can demonstrate to the Administrative Authority, either in the post-closure plan or by petition, through the procedures in §§23.46c) or 23.46f), as appropriate, that the disturbance:
- 1) Is necessary to the proposed use of the property, and will not increase the potential hazard to human health or the environment; or
 - 2) Is necessary to reduce a threat to human health or the environment.
- d) All post-closure care activities must be performed in accordance with the provisions of the approved post-closure plan as specified in §23.46.

23.46 Post-closure plan; amendment of plan

- a) The owner or operator of a disposal facility must have a written post-closure plan. He must keep a copy of the post-closure plan and all revisions to the plan at the facility until the post-closure care period begins. The post-closure plan must identify the activities which will be carried on after closure and the frequency of these activities, and include at least:
- 1) A description of the planned groundwater monitoring activities and frequencies at which they will be performed to comply with Subchapter V during the post-closure period;
 - 2) A description of the planned maintenance activities and frequencies at which they will be performed, to ensure:

The integrity of the cap and final cover or other containment structures as specified in §§23.76, 23.79, 23.95, and 23.101 where applicable;

The proper functioning of the facility monitoring equipment as specified in §23.35; and

- 3) The name, address, and phone number of the person or office to contact about the disposal facility during the post-closure care period. This person or office must keep an updated post-closure plan during the post-closure care period.
- b) The owner or operator may amend his post-closure plan at any time during the active life of the disposal facility. The owner or operator must amend his plan any time changes in operating plans or facility design, or events which occur during the active life of the facility, affect his post-closure plan. The plan must be amended within 60 days after the changes or events occur.
- c) The owner or operator of a disposal facility must submit his post-closure plan to the Administrative Authority at least 180 days before the date he expects to begin closure. The date when he "expects to begin closure" should be immediately or within 30 days after the date on which he expects to receive the final volume of wastes. The owner or operator must submit his closure plan to the Administrative Authority no later than 15 days after:
 - 1) Termination of interim status (except when a permit is issued to the facility simultaneously with termination of interim status); or
 - 2) Issuance of a judicial decree or compliance order under the Act to cease receiving wastes or close.
- d) The Administrative Authority will provide the owner or operator and the public through a newspaper notice the opportunity to submit written comments on the plan and request modifications of the plan including modification of the 30 year post-closure period required in §23.45 within 30 days of the date of the notice. He may also, in response to a request or at his own discretion, hold a public hearing whenever a hearing might clarify one or more issues concerning the post-closure plan. The Administrative Authority will give the public notice of the hearing at least 30 days before it occurs. (Public notice of the hearing may be given at the same time as notice of the opportunity for written public comments, and the two notices may be combined.) The Administrative Authority will approve, modify, or disapprove the plan within 90 days of its receipt. If the Administrative Authority does not approve the plan, the owner or operator must modify the plan or submit a new plan for approval within 30 days. The Administrative Authority will approve or modify this plan in writing within 60 days. If the Administrative Authority modifies the plan, this modified plan becomes the approved post-closure plan. The Administrative Authority must base his decision upon the criteria required of petitions under §23.46f)1). A copy of this modified plan must be mailed to the owner or operator.
- e) The owner or operator may amend his post-closure plan during the post-closure care period. The owner or operator must amend his plan any time

changes in monitoring or maintenance plans, or events which occur during the post-closure care period, affect the post-closure plan. The owner or operator must petition the Administrative Authority within 60 days of the changes or events, under the procedures of §23.46f), to allow the plan to be modified.

- f) The post-closure plan (or period) may be modified during the post-closure care period or at the end of the post-closure care period in either of the following two ways:
- 1) The owner or operator or any member of the public may petition the Administrative Authority to extend or reduce the post-closure care period based on cause, or alter the requirements of the post-closure care period based on cause.

The petition must include evidence demonstrating that:

The secure nature of the facility makes the post-closure care requirement(s) unnecessary or supports reduction of the post-closure care period specified in the current post-closure plan (e.g., leachate or groundwater monitoring results, characteristics of the waste, application of advanced technology, or alternative disposal, treatment, or re-use techniques indicate that the facility is secure); or

The requested extension in the post-closure care period or alteration of post-closure care requirements is necessary to prevent threats to human health and the environment.

These petitions will be considered by the Administrative Authority only when they present new and relevant information not previously considered by the Administrative Authority. Whenever the Administrative Authority is considering a petition, he will provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments within 30 days of the date of the notice. He will also, in response to a request or at his own discretion, hold a public hearing whenever a hearing might clarify one or more issues concerning the post-closure plan. The Administrative Authority will give the public notice of the hearing at least 30 days before it occurs. (Public notice of the hearing may be given at the same time as notice of the opportunity for written public comments, and the two notices may be combined.) After considering the comments, he will issue a final determination, based upon the criteria set forth in §23.46f)1).

If the Administrative Authority denies the petition, he will send the petitioner a brief written response giving a reason for the denial; or

- 2) The Administrative Authority may tentatively decide to modify the post-closure plan if he deems it necessary to prevent threats to

human health and the environment. He may propose to extend or reduce the post-closure care period based on cause or alter the requirements of the post-closure care period based on cause.

The Administrative Authority will provide the owner or operator and the affected public, through a newspaper notice, the opportunity to submit written comments within 30 days of the date of the notice and the opportunity for a public hearing as in §23.46f)1). After considering the comments, he will issue a final determination.

The Administrative Authority will base his final determination upon the same criteria as required for petitions under §23.46f)1).

- g) Where appropriate, a modification of the post-closure plan may include the temporary suspension rather than permanent deletion of one or more post-closure care requirements. At the end of the specified period of suspension, the Administrative Authority would then determine whether the requirement(s) should be permanently discontinued or reinstated to prevent threats to human health and the environment.

23.47 Notice to local land authority

Within 90 days after closure is completed, the owner or operator of a disposal facility must submit to the local land authority and to the Administrative Authority a survey plat indicating the location and dimensions of land-fill cells or other disposal areas with respect to permanently surveyed benchmarks. This plat must be prepared and certified by a professional land surveyor. The plat, filed with the local land authority, must contain a note, prominently displayed, which states the owner's or operator's obligation to restrict disturbance of the site as specified in §23.45c). In addition, the owner or operator must submit to the Administrative Authority and to the local land authority a record of the type, location, and quantity of hazardous wastes disposed of within each cell or area of the facility. For wastes disposed of before these regulations were promulgated, the owner or operator must identify the type, location, and quantity of the wastes to the best of his knowledge and in accordance with any records he has kept.

23.48 Notice in deed to property

The owner of the property on which a disposal facility is located must 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:

- a) The land has been used to manage hazardous waste; and
- b) Its use is restricted under §23.45c).

Subchapter VII
Financial Requirements

23.49 Applicability

- a) The requirements of §§20.10, 23.51, 23.52, 23.56, and 23.57 apply to owners and operators of all hazardous waste facilities, except as provided otherwise in this section or in §1.3d.
- b) The requirements of §§23.53, 23.54, and 23.55 apply only to owners and operators of disposal facilities.
- c) States and the Federal government are exempt from the requirements of this Subchapter.

23.50 Definitions of terms as used in this subpart

a) General terms

- 1) Closure plan -- the plan for closure prepared in accordance with the requirements of §23.41.
- 2) Current closure cost estimate -- the most recent of the estimates prepared in accordance with §23.51.
- 3) Current post-closure cost estimate -- the most recent of the estimates prepared in accordance with §23.53.
- 4) Parent corporation -- a corporation which directly owns at least 50 percent of the voting stock of the corporation which is the facility owner or operator; the latter corporation is deemed a "subsidiary" of the parent corporation.
- 5) Post-closure plan -- the plan for post-closure care prepared in accordance with the requirements of §§23.45 through 23.48.
- 6) The following terms are used in the specifications for the financial tests for closure, post-closure care, and liability coverage. The definitions are intended to assist in the understanding of these regulations and are not intended to limit the meanings of terms in a way that conflicts with generally accepted accounting practices.

Assets -- all existing and all probable future economic benefits obtained or controlled by a particular entity.

Current assets -- cash or other assets, or resources commonly identified as those which are reasonably expected to be realized in cash, or sold, or consumed during the normal operating cycle of the business.

Current liabilities -- obligations whose liquidation is reasonably expected to require the use of existing resources properly classifiable as current assets or the creation of other current liabilities.

Independently audited -- an audit performed by an independent certified public accountant in accordance with generally accepted auditing standards.

Liabilities -- probable future sacrifices of economic benefits arising from present obligations to transfer assets or provide services to other entities in the future as a result of past transactions or events.

Net working capital -- current assets minus current liabilities.

Net worth -- total assets minus total liabilities and is equivalent to owner's equity.

Tangible net worth -- the tangible assets that remain after deducting liabilities; such assets would not include intangibles such as goodwill and rights to patents or royalties.

- b) Insurance-related terms -- In the liability insurance requirements the terms bodily injury and property damage shall have the meanings given these terms by applicable State law. However, these terms do not include those liabilities which, consistent with standard industry practice, are excluded from coverage in liability policies for bodily injury and property damage. The Department intends the meanings of other terms used in the liability insurance requirements are to be consistent with their common meanings within the insurance industry. The definitions of several of the terms given below are intended to assist in the understanding of these regulations and are not intended to limit their meanings in a way that conflicts with general insurance industry usage.
- 1) Accidental occurrence -- an accident, including continuous or repeated exposure to conditions, which results in bodily injury or property damage neither expected nor intended from the standpoint of the insured.
 - 2) Legal defense costs -- any expenses that an insurer incurs in defending against claims of third parties brought under the terms and conditions of an insurance policy.
 - 3) Nonsudden accidental occurrence -- an occurrence which takes place over time and involves continuous or repeated exposure.
 - 4) Sudden accidental occurrence -- an occurrence which is not continuous or repeated in nature.

23.51 Cost estimate for closure

- A-10 C-8 E-18.2
B-4 D-5
C-1
- a) The owner or operator must prepare a written estimate, in current dollars; of the cost of closing the facility in accordance with the closure plan as specified in §23.41. The closure cost estimate must equal the cost of closure at the point in the facility's operating life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan.
 - b) The owner or operator must adjust the closure cost estimate for inflation within 30 days after each anniversary of the date on which the first closure cost estimate was prepared. The adjustment must be made as specified in §§23.51b)1) and 23.51b)2), using an inflation factor derived from the annual Implicit Price Deflator for Gross National Product as published by the U.S. Department of Commerce in its Survey of Current Business. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.
 - 1) The first adjustment is made by multiplying the closure cost estimate by the inflation factor. The result is the adjusted closure cost estimate.
 - 2) Subsequent adjustments are made by multiplying the latest adjusted closure cost estimate by the latest inflation factor.
 - c) The owner or operator must revise the closure cost estimate whenever a change in the closure plan increases the cost of closure. The revised closure cost estimate must be adjusted for inflation as specified in §23.51b).
 - d) The owner or operator must keep, at the facility during the operating life of the facility, the latest closure cost estimate prepared in accordance with §23.51a) and 23.51c) and, when this estimate has been adjusted in accordance with §23.51b), the latest adjusted closure cost estimate.

23.52 Financial assurance for closure -- By the effective date of these regulations an owner or operator of each facility must establish financial assurance for closure of the facility. He must choose from the options as specified in §§23.52a) through 23.52e).

- a) Closure trust fund
 - 1) An owner or operator may satisfy the requirements of §23.52 by establishing a closure trust fund which conforms to the requirements of this paragraph, and submitting an originally signed duplicate of the trust agreement to the Administrative Authority. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.
 - 2) The wording of the trust agreement must be identical to the wording specified in §20.10a)1), and the trust agreement must be accompanied by a formal certification of acknowledgment [for example, see §20.10a)2)]. Schedule A of the trust agreement must be updated

within 60 days after a change in the amount of the current closure cost estimate covered by the agreement.

- 3) Payments into the trust fund must be made annually by the owner or operator over the 20-years beginning with the effective date of these regulations or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments into the closure trust fund must be made as follows:

The first payment must be made by the effective date of these regulations except as provided in §23.52a)5). The first payment must be at least equal to the current closure cost estimate, except as provided in §23.52f), divided by the number of years in the pay-in period.

Subsequent payments must be made no later than thirty days after each anniversary date of the first payment. The amount of each subsequent payment must be determined by this formula:

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

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

- 4) The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current closure cost estimate at the time the fund is established. However, he must maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in §23.52a)3).
- 5) If the owner or operator establishes a closure trust fund after having used one or more alternate mechanisms specified in §23.52, his first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made as specified in §23.52a)3).
- 6) After the pay-in period is completed, whenever the current closure cost estimate changes, the owner or operator must compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within sixty days after the change in the cost estimate, must either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current closure cost estimate, or obtain other financial assurance as specified in this section to cover the difference.
- 7) If the value of the trust fund is greater than the total amount of the current closure cost estimate, the owner or operator may submit a written request to the Administrative Authority for release of the amount in excess of the current closure cost estimate.

- 8) If an owner or operator substitutes other financial assurance as specified in §23.52 for all or part of the trust fund, he may submit a written request to the Administrative Authority for release of the amount in excess of the current closure cost estimate covered by the trust fund.
 - 9) Within sixty days after receiving a request from the owner or operator for release of funds as specified in §§23.52a)7) or 23.52a)8) the Administrative Authority will instruct the trustee to release to the owner or operator such funds as the Administrative Authority specifies in writing.
 - 10) After beginning final closure, an owner or operator, or any other person authorized to perform closure may request reimbursement for closure expenditures by submitting itemized bills to the Administrative Authority. Within sixty days after receiving bills for closure activities, the Administrative Authority will determine whether the closure expenditures are in accordance with the closure plan or otherwise justified, and if so, he will instruct the trustee to make reimbursement in such amounts as the Administrative Authority specifies in writing. If the Administrative Authority has reason to believe that the cost of closure will be significantly greater than the value of the trust fund, he may withhold reimbursement of such amounts as he deems prudent until he determines, in accordance with §23.52h), that the owner or operator is no longer required to maintain financial assurance for closure.
 - 11) The Administrative Authority will agree to termination of the trust when:
 - An owner or operator substitutes alternate financial assurance as specified in §23.52; or
 - The Administrative Authority releases the owner or operator from the requirements of §23.52 in accordance with §23.52h).
- b) Surety bond guaranteeing payment into a closure trust fund
- 1) An owner or operator may satisfy the requirements of §23.52 by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Administrative Authority. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.
 - 2) The wording of the surety bond must be identical to the wording specified in §20.10b).
 - 3) The owner or operator who uses a surety bond to satisfy the requirements of §23.52 must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with

instructions from the Administrative Authority. This standby trust fund must meet the requirements specified in §23.52a) except that:

An originally signed duplicate of the trust agreement must be submitted to the Administrative Authority with the surety bond; and

Until the standby trust fund is funded pursuant to the requirements of §23.52, the following are not required by these regulations:

Payments into the trust fund as specified in §23.52a);

Updating of Schedule A of the trust agreement to show current closure cost estimates;

Annual valuations as required by the trust agreement; and

Notices of nonpayment as required by the trust agreement.

- 4) The bond must guarantee that the owner or operator will:

Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility; or

Fund the standby trust fund in an amount equal to the penal sum within 15 days after an order to begin closure is issued by the Administrative Authority or a U.S. district court or other court of competent jurisdiction; or

Provide alternate financial assurance as specified in §23.52 and obtain the Administrative Authority's written approval of the assurance provided, within ninety days after receipt by both the owner or operator and the Administrative Authority of a notice of cancellation of the bond from the surety.

- 5) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.
- 6) The penal sum of the bond must be in an amount at least equal to the current closure cost estimate, except as provided in §23.52f).
- 7) Whenever the current closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within sixty days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Administrative Authority, or obtain other financial assurance as specified in §23.52 to cover the increase. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate following written approval by the Administrative Authority.
- 8) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator

and to the Administrative Authority. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Administrative Authority, as evidenced by the return receipts.

- 9) The owner or operator may cancel the bond if the Administrative Authority has given prior written consent based on his receipt of evidence of alternate financial assurance as specified in §23.52.

c) Closure letter of credit

- 1) An owner or operator may satisfy the requirements of §23.52 by obtaining an irrevocable standby letter of credit which conforms to the requirements of this paragraph and submitting the letter to the Administrative Authority. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a Federal or State agency.
- 2) The wording of the letter of credit must be identical to the wording specified in §20.10d).
- 3) An owner or operator who uses a letter of credit to satisfy the requirements of §23.52 must also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Administrative Authority will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Administrative Authority. This standby trust fund must meet the requirements of the trust fund specified in §23.52a), except that:

An originally signed duplicate of the trust agreement must be submitted to the Administrative Authority with the letter of credit; and

Unless the standby trust fund is funded pursuant to the requirements of §23.52, the following are not required by these regulations:

Payments into the trust fund as specified in §23.52a);

Updating of Schedule A of the trust agreement [see §20.10a)] to show current closure cost estimates;

Annual valuations as required by the trust agreement; and

Notices of nonpayment as required by the trust agreement.

- 4) The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: the Hazardous Waste Facility Identification Number, name and address of

the facility, and the amount of funds assured for closure of the facility by the letter of credit.

- 5) The letter of credit must be irrevocable and issued for a period of at least one year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the Administrative Authority by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the Administrative Authority have received the notice, as evidenced by the return receipts.
- 6) The letter of credit must be issued in an amount at least equal to the current closure cost estimate, except as provided in §23.52f).
- 7) Whenever the current closure cost estimate increases to an amount greater than the amount of the credit, the owner or operator, within sixty days after the increase, must either cause the amount of the credit to be increased so that it at least equals the current closure cost estimate and submit evidence of such increase to the Administrative Authority, or obtain other financial assurance as specified in §23.52 to cover the increase. Whenever the current closure cost estimate decreases, the amount of the credit may be reduced to the amount of the current closure cost estimate following written approval by the Administrative Authority.
- 8) Following a determination pursuant to Section 3008 of RCRA that the owner or operator has failed to perform final closure in accordance with the closure plan and other interim status requirements when required to do so, the Administrative Authority may draw on the letter of credit.
- 9) If the owner or operator does not establish alternate financial assurance as specified in §23.52, and obtain written approval of such alternate assurance from the Administrative Authority within ninety days after receipt by both the owner or operator and the Administrative Authority of a notice from the issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the Administrative Authority may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last thirty days of any such extension the Administrative Authority will draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in §23.52 and obtain written approval of such assurance from the Administrative Authority.
- 10) The Administrative Authority will return the letter of credit to the issuing institution for termination when:

An owner or operator substitutes alternate financial assurance as specified in §23.52; or

The Administrative Authority releases the owner or operator from the requirements of §23.52 in accordance with §23.52h).

d) Closure insurance

- 1) An owner or operator may satisfy the requirements of §23.52 by obtaining closure insurance which conforms to the requirements of this paragraph and submitting a certificate of such insurance to the Administrative Authority. By the effective date of these regulations the owner or operator must submit to the Administrative Authority a letter from an insurer stating that the insurer is considering issuance of closure insurance conforming to the requirements of this paragraph to the owner or operator. Within ninety days after the effective date of these regulations, the owner or operator must submit the certificate of insurance to the Administrative Authority or establish other financial assurance as specified in this section. At a minimum, the insurer must be licensed to transact the business of insurance, or be eligible to provide insurance as an excess or surplus lines insurer, in one or more States, and authorized to transact business in Louisiana.
- 2) The wording of the certificate of insurance must be identical to the wording specified in §20.10e).
- 3) The closure insurance policy must be issued for a face amount at least equal to the current closure cost estimate, except as provided in §23.52f). The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.
- 4) The closure insurance policy must guarantee that funds will be available to close the facility whenever final closure occurs. The policy must also guarantee that once final closure begins, the insurer will be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the Administrative Authority to such party or parties as the Administrative Authority specifies.
- 5) After beginning final closure, an owner or operator, or any other person authorized to perform closure may request reimbursement for closure expenditures by submitting itemized bills to the Administrative Authority. Within sixty days after receiving bills for closure activities, the Administrative Authority will determine whether the closure expenditures are in accordance with the closure plan or otherwise justified, and if so, he will instruct the insurer to make reimbursement in such amounts as the Administrative Authority specifies in writing. If the Administrative Authority has reason to believe that the cost of closure will be significantly greater than the face amount of the policy, he may withhold reimbursement of such amounts as he deems prudent until he determines, in accordance with §23.52h), that the owner or operator is no longer required to maintain financial assurance for closure of the facility.

- 6) The owner or operator must maintain the policy in full force and effect until the Administrative Authority consents to termination of the policy by the owner or operator as specified in §23.52d)10). Failure to pay the premium, without substitution of alternate financial assurance as specified in §23.52, will constitute a significant violation of these regulations, warranting such remedy as the Administrative Authority deems necessary. Such violation will be deemed to begin upon receipt by the Administrative Authority of a notice of future cancellation, termination, or failure to renew, due to nonpayment of the premium, rather than upon the date of expiration.
- 7) Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided such consent is not unreasonably refused.
- 8) The policy must provide that the insurer may not cancel, terminate or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the Administrative Authority. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the Administrative Authority and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration:

The Administrative Authority deems the facility abandoned; or

Interim status is terminated or revoked;

Closure is ordered by the Administrative Authority or a U.S. district court or other courts of competent jurisdiction; or

The owner or operator is named as debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or

The premium due is paid.

- 9) Whenever the current closure cost estimate increases to an amount greater than the face amount of the policy, the owner or operator, within 60 days after the increase, must either cause the face amount to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Administrative Authority, or obtain other financial assurance as specified in §23.52 to cover the increase. Whenever the current closure cost estimate decreases, the face amount may be reduced to the amount of the current closure cost estimate following written approval by the Administrative Authority.

- 10) The Administrative Authority will give written consent to the owner or operator that he may terminate the insurance policy when:

An owner or operator substitutes alternate financial assurance as specified in §23.52; or

The Administrative Authority releases the owner or operator from the requirements of §23.52 in accordance with §23.52h).

e) Financial test and corporate guarantee for closure

- 1) An owner or operator may satisfy the requirements of §23.52 by demonstrating that he passes a financial test as specified in this paragraph. To pass this test the owner or operator must meet the criteria of either of the following:

The owner or operator must have:

Two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5; and

Net working capital and tangible net worth each at least six times the sum of the current closure and post-closure cost estimates; and

Tangible net worth of at least \$10 million; and

Assets in the United States amounting to at least ninety percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

The owner or operator must have:

A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's; and

Tangible net worth at least six times the sum of the current closure and post-closure cost estimates; and

Tangible net worth of at least \$10 million; and

Assets located in the United States amounting to at least ninety percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

- 2) The phrase "current closure and post-closure cost estimates" as used in §23.52e)1) refers to the cost estimates required to be shown in paragraphs 1-4 of the letter from the owner's or operator's chief financial officer [see §20.10f)].

- 3) To demonstrate that he meets this test, the owner or operator must submit the following items to the Administrative Authority:

A letter signed by the owner's or operator's chief financial officer and worded as specified in §20.10f); and

A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

- 4) The owner or operator may obtain an extension of the time allowed for submission of the documents specified in §23.52e)3) if the fiscal year of the owner or operator ends during the 90 days prior to the effective date of these regulations and if the year-end financial statements for that fiscal year will be audited by an independent certified public accountant. The extension will end no later than 90 days after the end of the owner's or operator's fiscal year. To obtain the extension, the owner's or operator's chief financial officer must send, by the effective date of these regulations, a letter to the Administrative Authority. This letter from the chief financial officer must:

Request the extension;

Certify that he has grounds to believe that the owner or operator meets the criteria of the financial test;

Specify for each facility to be covered by the test the Hazardous Waste Facility Identification Number, name, address, and current closure and post-closure cost estimates to be covered by the test;

Specify the date ending the owner's or operator's last complete fiscal year before the effective date of these regulations;

Specify the date, no later than ninety days after the end of such fiscal year, when he will submit the documents specified in §23.52e)3); and

Certify that the year-end financial statement of the owner or operator for such fiscal year will be audited by an independent certified public accountant.

- 5) After the initial submission of items specified in §23.52e)3), the owner or operator must send updated information to the Administrative Authority within ninety days after the close of each succeeding fiscal year. This information must consist of all three items specified in §23.52e)3).
- 6) If the owner or operator no longer meets the requirements of §23.52e)1), he must send notice to the Administrative Authority of intent to establish alternate financial assurance as specified in §23.52. The notice must be sent by certified mail within ninety days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator must provide the alternate financial assurance within 120 days after the end of such fiscal year.
- 7) The Administrative Authority may, based on a reasonable belief that the owner or operator may no longer meet the requirements of §23.52e)1), require reports of financial condition at any time from the owner or operator in addition to those specified in §23.52e)3). If the Administrative Authority finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of §23.52e)1), the owner or operator must provide alternate financial assurance as specified in §23.52 within thirty days after notification of such a finding.
- 8) The Administrative Authority may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements [see §23.52e)3)]. An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Administrative Authority will evaluate other qualifications on an individual basis. The owner or operator must provide alternate financial assurance as specified in §23.52 within thirty days after notification of the disallowance.
- 9) The owner or operator is no longer required to submit the items specified in §23.52e)3) when:
 - An owner or operator substitutes alternate financial assurance as specified in §23.52; or
 - The Administrative Authority releases the owner or operator from the requirements of §23.52 in accordance with §23.52h).
- 10) An owner or operator may meet the requirements of §23.52 by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators in §§23.52e)1) through 23.52e)8) and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in §20.10h). The corporate guarantee must accompany the items sent to the Administrative

Authority as specified in §23.52e)3). The terms of the corporate guarantee must provide that:

If the owner or operator fails to perform final closure of a facility covered by the corporate guarantee in accordance with the closure plan and other interim status requirements whenever required to do so, the guarantor will do so or establish a trust fund as specified in §23.52a) in the name of the owner or operator.

The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Administrative Authority. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Administrative Authority, as evidenced by the return receipts.

If the owner or operator fails to provide alternate financial assurance as specified in §23.52 and obtain the written approval of such alternate assurance from the Administrative Authority within ninety days after receipt by Administrative Authority of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide such alternative financial assurance in the name of the owner or operator.

- f) Use of multiple financial mechanisms -- An owner or operator may satisfy the requirements of §23.52 by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds, letters of credit, and insurance. The mechanisms must be as specified in §§23.52a) through 23.52d), respectively, except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the current closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The Administrative Authority may use any or all of the mechanisms to provide for closure of the facility.
- g) Use of a financial mechanism for multiple facilities -- An owner or operator may use a financial assurance mechanism specified in §23.52 to meet the requirements of §23.52 for more than one facility. Evidence of financial assurance submitted to the Administrative Authority must include a list showing, for each facility, the Hazardous Waste Facility Identification Number, name, address, and the amount of funds for closure assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing the funds available through the mechanism for closure of any of the facilities covered by the mechanism, the Administrative Authority may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.

- h) Release of the owner or operator from the requirements of §23.52 -- Within sixty days after receiving certifications from the owner or operator and an independent registered professional engineer that closure has been accomplished in accordance with the closure plan, the Administrative Authority will notify the owner or operator in writing that he is no longer required by §23.52 to maintain financial assurance for closure of the particular facility, unless the Administrative Authority has reason to believe that closure has not been in accordance with the closure plan.

23.53 Cost estimate for post-closure care

- a) The owner or operator of a disposal facility must prepare a written estimate, in current dollars, of the annual cost of post-closure monitoring and maintenance of the facility in accordance with the applicable post-closure regulations in §§23.45 through 23.48. The post-closure cost estimate is calculated by multiplying the annual post-closure cost estimate by the number of years of post-closure care required under Subchapter VI of Chapter 23.
- b) During the operating life of the facility, the owner or operator must adjust the post-closure cost estimate for inflation within thirty days after each anniversary of the date on which the first post-closure cost estimate was prepared. The adjustment must be made as specified in §§23.53b)1) and 23.53b)2), using an inflation factor derived from the annual Implicit Price Deflator for Gross National Product as published by the U.S. Department of Commerce in its Survey of Current Business. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.
 - 1) The first adjustment is made by multiplying the post-closure cost estimate by the inflation factor. The result is the adjusted post-closure cost estimate.
 - 2) Subsequent adjustments are made by multiplying the latest adjusted post-closure cost estimate by the latest inflation factor.
- c) The owner or operator must revise the post-closure cost estimate during the operating life of the facility whenever a change in the post-closure plan increases the cost of post-closure care. The revised post-closure cost estimate must be adjusted for inflation as specified in §23.53b).
- d) The owner or operator must keep the following at the facility during the operating life of the facility: the latest post-closure cost estimate prepared in accordance with §§23.53a) and 23.53c) and, when this estimate has been adjusted in accordance with §23.53b), the latest adjusted post-closure cost estimate.

23.54 Financial assurance for post-closure care -- An owner or operator of each disposal facility must establish financial assurance for post-closure care of the facility. He must choose from the options as specified in §§23.54a) through 23.54e).

- a) Post-closure trust fund

- 1) An owner or operator may satisfy the requirements of §23.54a) by establishing a post-closure trust fund which conforms to the requirements of this paragraph and submitting an originally signed duplicate of the trust agreement to the Administrative Authority. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.
- 2) The wording of the trust agreement must be identical to the wording specified in §20.10a)1), and the trust agreement must be accompanied by a formal certification of acknowledgment (for example, see §20.10a)2). Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current post-closure cost estimate covered by the agreement.
- 3) Payments into the trust fund must be made annually by the owner or operator over the 20 years beginning with the effective date of these regulations or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments into the post-closure trust fund must be made as follows:

The first payment must be made by the effective date of these regulations, except as provided in §23.54a)5). The first payment must be at least equal to the current post-closure cost estimate, except as provided in §23.54f), divided by the number of years in the pay-in period.

Subsequent payments must be made no later than thirty days after each anniversary date of the first payment. The amount of each subsequent payment must be determined by this formula:

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

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

- 4) The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current post-closure cost estimate at the time the fund is established. However, he must maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in §23.54a)3).
- 5) If the owner or operator establishes a post-closure trust fund after having used one or more alternate mechanisms specified in §23.54, his first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made as specified in §23.54a)3).

- 6) After the pay-in period is completed, whenever the current post-closure cost estimate changes during the operating life of the facility, the owner or operator must compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within sixty days after the change in the cost estimate, must either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current post-closure cost estimate, or obtain other financial assurance as specified in §23.54 to cover the difference.
- 7) During the operating life of the facility, if the value of the trust fund is greater than the total amount of the current post-closure cost estimate, the owner or operator may submit a written request to the Administrative Authority for release of the amount in excess of the current post-closure cost estimate.
- 8) If an owner or operator substitutes other financial assurance as specified in §23.54 for all or part of the trust fund, he may submit a written request to the Administrative Authority for release of the amount in excess of the current post-closure cost estimate covered by the trust fund.
- 9) Within sixty days after receiving a request from the owner or operator for release of funds as specified in §§20.6g) or 20.6h), the Administrative Authority will instruct the trustee to release to the owner or operator such funds as the Administrative Authority specifies in writing.
- 10) During the period of post-closure care, the Administrative Authority may approve a release of funds if the owner or operator demonstrates to the Administrative Authority that the value of the trust fund exceeds the remaining cost of post-closure care.
- 11) An owner or operator, or any other person authorized to perform post-closure care, may request reimbursement for the post-closure expenditures by submitting itemized bills to the Administrative Authority. Within sixty days after receiving bills for post-closure activities, the Administrative Authority will determine whether the post-closure expenditures are in accordance with the post-closure plan or otherwise justified, and if so, he will instruct the trustee to make reimbursement in such amounts as the Administrative Authority specifies in writing.
- 12) The Administrative Authority will agree to termination of the trust when:

An owner or operator substitutes alternate financial assurance as specified in §23.54; or

The Administrative Authority releases the owner or operator from the requirements of §23.54a) in accordance with §23.541).

b) Surety bond guaranteeing payment into a post-closure trust fund

- 1) An owner or operator may satisfy the requirements of §23.54b) by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Administrative Authority. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.
- 2) The wording of the surety bond must be identical to the wording specified in §20.10b).
- 3) The owner or operator who uses a surety bond to satisfy the requirements of §23.54b) must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Administrative Authority. This standby trust fund must meet the requirements specified in §23.54a), except that:

An originally signed duplicate of the trust agreement must be submitted to the Administrative Authority with the surety bond; and

Until the standby trust fund is funded pursuant to the requirements of §23.54b), the following are not required by these regulations:

Payments into the trust fund as specified in §23.54a)3);

Updating of Schedule A of the trust agreement to show current post-closure cost estimates;

Annual valuations as required by the trust agreement; and

Notices of nonpayment as required by the trust agreement.

- 4) The bond must guarantee that the owner or operator will:

Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility; or

Fund the standby trust fund in an amount equal to the penal sum within fifteen days after an order to begin closure is issued by the Administrative Authority, or a court of competent jurisdiction; or

Provide alternate financial assurance as specified in §23.54b) and obtain the Administrative Authority's written approval of the assurance provided within ninety days after receipt by both the owner or operator and the Administrative Authority of a notice of cancellation of the bond from the surety.

- 5) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

- 6) The penal sum of the bond must be in an amount at least equal to the current post-closure cost estimate, except as provided in §23.54f).
- 7) Whenever the current post-closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within sixty days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the Administrative Authority, or obtain other financial assurance as specified in §23.54b) to cover the increase. Whenever the current post-closure cost estimate decreases, the penal sum may be reduced to the amount of the current post-closure cost estimate following written approval by the Administrative Authority.
- 8) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator, and to the Administrative Authority. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Administrative Authority, as evidenced by the return receipts.
- 9) The owner or operator may cancel the bond if the Administrative Authority has given prior written consent based on his receipt of evidence of alternate financial assurance as specified in §23.54b).

c) Post-closure letter of credit

- 1) An owner or operator may satisfy the requirements of §23.54c) by obtaining an irrevocable standby letter of credit which conforms to the requirements of this paragraph and by submitting the letter to the Administrative Authority. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a Federal or State agency.
- 2) The wording of the letter of credit must be identical to the wording specified in §20.10d).
- 3) An owner or operator who uses a letter of credit to satisfy the requirements of §23.54c) must also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Administrative Authority will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Administrative Authority. This standby trust fund must meet the requirements of the trust fund specified in §23.54a), except that:

An originally signed duplicate of the trust agreement must be submitted to the Administrative Authority with the letter of credit; and

Unless the standby trust fund is funded pursuant to the requirements of §23.54c), the following are not required by these regulations:

Payments into the trust fund as specified in §23.54a);

Updating of Schedule A of the trust agreement (see §28.10a)] to show current post-closure cost estimates;

Annual valuations as required by the trust agreement; and

Notices of nonpayment as required by the trust agreement.

- 4) The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: the Hazardous Waste Facility Identification Number, name and address of the facility, and the amount of funds assured for post-closure care of the facility by the letter of credit.
- 5) The letter of credit must be irrevocable and issued for a period of at least one year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator, and the Administrative Authority by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator, and the Administrative Authority have received the notice, as evidenced by the return receipts.
- 6) The letter of credit must be issued in an amount at least equal to the current post-closure cost estimate, except as provided in §23.54f).
- 7) Whenever the current post-closure cost estimate increases to an amount greater than the amount of the credit during the operating life of the facility, the owner or operator, within sixty days after the increase, must either cause the amount of the credit to be increased so that it at least equals the current post-closure cost estimate and submit evidence of such increase to the Administrative Authority, or obtain other financial assurance as specified in §23.54 to cover the increase. Whenever the current post-closure cost estimate decreases during the operating life of the facility, the amount of the credit may be reduced to the amount of the current post-closure cost estimate following written approval by the Administrative Authority.
- 8) During the period of post-closure care, the Administrative Authority may approve a decrease in the amount of the letter of credit if the owner or operator demonstrates to the Administrative Authority that the amount exceeds the remaining cost of post-closure care.

- 9) Following a determination pursuant to Section 3008 of RCRA by the Administrative Authority that the owner or operator has failed to perform post-closure care in accordance with the post-closure plan and other permit requirements, the Administrative Authority may draw on the letter of credit.
- 10) If the owner or operator does not establish alternate financial assurance as specified in §23.54 and obtain written approval of such alternate assurance from the Administrative Authority within ninety days after receipt by both the owner or operator and the Administrative Authority of a notice from the issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the Administrative Authority will draw on the letter of credit. The Administrative Authority may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last thirty days of any such extension the Administrative Authority will draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in §23.54 and obtain written approval of such assurance from the Administrative Authority.
- 11) The Administrative Authority will return the letter of credit to the issuing institution for termination when:

An owner or operator substitutes alternate financial assurance as specified in §23.54; or

The Administrative Authority releases the owner or operator from the requirements of §23.54 in accordance with §23.54h).

d) Post-closure insurance

- 1) An owner or operator may satisfy the requirements of §23.54d) by obtaining post-closure insurance which conforms to the requirements of this paragraph and submitting a certificate of such insurance to the Administrative Authority. The owner or operator must submit to the Administrative Authority a letter from an insurer stating that the insurer is considering issuance of post-closure insurance conforming to the requirements of this paragraph to the owner or operator. Within ninety days after the effective date of these regulations, the owner or operator must submit the certificate of insurance to the Administrative Authority or establish other financial assurance as specified in §23.54. At a minimum, the insurer must be licensed to transact the business of insurance, or be eligible to provide insurance as an excess or surplus lines insurer in one or more States, and authorized to transact insurance business in Louisiana.
- 2) The wording of the certificate of insurance must be identical to the wording specified in §20.10e).
- 3) The post-closure insurance policy must be issued for a face amount at least equal to the current post-closure cost estimate, except as

provided in §23.54f). The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

- 4) The post-closure insurance policy must guarantee that funds will be available to provide post-closure care of the facility whenever the post-closure period begins. The policy must also guarantee that once post-closure care begins, the insurer will be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the Administrative Authority, to such party or parties as the Administrative Authority specifies.
- 5) An owner or operator or any other person authorized to perform post-closure care may request reimbursement for post-closure expenditures by submitting itemized bills to the Administrative Authority. Within sixty days after receiving bills for post-closure activities, the Administrative Authority will determine whether the post-closure expenditures are in accordance with the post-closure plan or otherwise justified, and if so, he will instruct the insurer to make reimbursement in such amounts as the Administrative Authority specifies in writing.
- 6) The owner or operator must maintain the policy in full force and effect until the Administrative Authority consents to termination of the policy by the owner or operator as specified in §23.54d)11). Failure to pay the premium, without substitution of alternate financial assurance as specified in §23.54, will constitute a significant violation of these regulations, warranting such remedy as the Administrative Authority deems necessary. Such violation will be deemed to begin upon receipt by the Administrative Authority of a notice of future cancellation, termination, or failure to renew due to nonpayment of the premium, rather than upon the date of expiration.
- 7) Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided such consent is not unreasonably refused.
- 8) The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the Administrative Authority. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the Administrative Authority and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration:

The Administrative Authority deems the facility abandoned; or

Interim status is terminated or revoked;

Closure is ordered by the Administrative Authority, or a court of competent jurisdiction; or

The owner or operator is named as debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or

The premium due is paid.

- 9) Whenever the current post-closure cost estimate increases to an amount greater than the face amount of the policy during the operating life of the facility, the owner or operator, within 60 days after the increase, must either cause the face amount to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the Administrative Authority, or obtain other financial assurance as specified in §23.54 to cover the increase. Whenever the current post-closure cost estimate decreases during the operating life of the facility, the face amount may be reduced to the amount of the current post-closure cost estimate following written approval by the Administrative Authority.

- 10) Commencing on the date that liability to make payments pursuant to the policy accrues, the insurer will thereafter annually increase the face amount of the policy. Such increase must be equivalent to the face amount of the policy, less any payments made, multiplied by an amount equivalent to eighty-five percent of the most recent investment rates or of the equivalent coupon-issue yield announced by the U.S. Treasury for twenty-six week Treasury securities.

- 11) The Administrative Authority will give written consent to the owner or operator that he may terminate the insurance policy when:

An owner or operator substitutes alternate financial assurance as specified in §23.54; or

The Administrative Authority releases the owner or operator from the requirements of §23.54 in accordance with §23.54h).

e) Financial test and corporate guarantee for post-closure care

- 1) An owner or operator may satisfy the requirements of §23.54e) by demonstrating that he passes a financial test as specified in this paragraph. To pass this test the owner or operator must meet the criteria of either of the following:

The owner or operator must have:

Two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities

greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5; and

Net working capital and tangible net worth each at least six times the sum of the current closure and post-closure cost estimates; and

Tangible net worth of at least \$10 million; and

Assets in the United States amounting to at least ninety percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

The owner or operator must have:

A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's; and

Tangible net worth at least six times the sum of the current closure and post-closure cost estimates; and

Tangible net worth of at least \$10 million; and

Assets located in the United States amounting to at least ninety percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

- 2) The phrase current closure and post-closure cost estimates as used in §23.54e)1) refers to the cost estimates required to be shown in Paragraphs 1 through 4 of the letter from the owner's or operator's chief financial officer [see §20.10f)].

- 3) To demonstrate that he meets this test, the owner or operator must submit the following items to the Administrative Authority:

A letter signed by the owner's or operator's chief financial officer and worded as specified in §20.10f); and

A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

- 4) The owner or operator may obtain an extension of the time allowed for submission of the documents specified in §23.54e)3) if the fiscal year of the owner or operator ends during the 90 days prior to the effective date of these regulations and if the year-end financial statements for that fiscal year will be audited by an independent certified public accountant. The extension will end no later than 90 days after the end of the owner's or operator's fiscal year. To obtain the extension, the owner's or operator's chief financial officer must send, by the effective date of these regulations, a letter to the Administrative Authority. This letter from the chief financial officer must:
 - a) Request the extension;
 - b) Certify that he has ground to believe that the owner or operator meets the criteria of the financial test;
 - c) Specify for each facility to be covered by the test the EPA Identification Number, name, address, and current closure and post-closure cost estimates to be covered by the test;
 - d) Specify the date ending the owner's or operator's latest complete fiscal year before the effective date of these regulations;
 - e) Specify the date, no later than 90 days after the end of such fiscal year, when he will submit the documents specified in §23.54(e)3); and
 - f) Certify that the year-end financial statement of the owner or operator for such fiscal year will be audited by an independent certified public accountant.
- 5) After the initial submission of items specified in §23.54e)3), the owner or operator must send updated information to the Administrative Authority within ninety days after the close of each succeeding fiscal year. This information must consist of all three items specified in §23.54e)3).
- 6) If the owner or operator no longer meets the requirements of §23.54e)1), he must send notice to the Administrative Authority of intent to establish alternate financial assurance as specified in §23.54. The notice must be sent by certified mail within ninety days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator must provide the alternate financial assurance within 120 days after the end of such fiscal year.
- 7) The Administrative Authority may, based on a reasonable belief that the owner or operator may no longer meet the requirements of

§23.54e)1), require reports of financial condition at any time from the owner or operator in addition to those specified in §23.54e)3. If the Administrative Authority finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of §23.54e)1), the owner or operator must provide alternate financial assurance as specified in §23.54 within thirty days after notification of such a finding.

- 8) The Administrative Authority may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements [see §23.54e)3)]. An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Administrative Authority will evaluate other qualifications on an individual basis. Based on the application, the circumstances, and the accessibility of the applicant's assets, the Administrative Authority may disallow the use of this test. The owner or operator must provide alternate financial assurance as specified in §23.54 within thirty days after notification of the disallowance.
- 9) During the period of post-closure care, the Administrative Authority may approve a decrease in the current post-closure cost estimate for which this test demonstrates financial assurance if the owner or operator demonstrates to the Administrative Authority that the amount of the cost estimate exceeds the remaining cost of post-closure care.
- 10) The owner or operator is no longer required to submit the items specified in §23.54e)3) when:
 - An owner or operator substitutes alternate financial assurance as specified in §23.54; or
 - The Administrative Authority releases the owner or operator from the requirements of §23.54 in accordance with §23.54h).
- 11) An owner or operator may meet the requirements of §23.54e) by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators of §§23.54e)1) through 23.54e)9) and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in §20.10h). The corporate guarantee must accompany the items sent to the Administrative Authority specified in §23.54e)3). The terms of the corporate guarantee must provide that:

If the owner or operator fails to perform post-closure care of a facility covered by the corporate guarantee in accordance with the post-closure plan and other permit requirements whenever required to do so, the guarantor will do so or establish a trust fund as specified in §23.54a) in the name of the owner or operator.

The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Administrative Authority. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Administrative Authority, as evidenced by the return receipts.

If the owner or operator fails to provide alternate financial assurance as specified in §23.54 and obtain the written approval of such alternate assurance from the Administrative Authority within ninety days after receipt by both the owner or operator and the Administrative Authority of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide such alternate financial assurance in the name of the owner or operator.

- f) Use of multiple financial mechanisms -- An owner or operator may satisfy the requirements of §23.54f) by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds guaranteeing payment into a trust fund, letters of credit, and insurance. The mechanisms must be as specified in §§23.54a) through 23.54d), respectively, except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the current post-closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The Administrative Authority may use any or all of the mechanisms to provide for post-closure care of the facility.
- g) Use of a financial mechanism for multiple facilities -- An owner or operator may use a financial assurance mechanism specified in §23.54g) to meet the requirements of §23.54g) for more than one facility. Evidence of financial assurance submitted to the Administrative Authority must include a list showing, for each facility, the Hazardous Waste Facility Identification Number, name, address, and the amount of funds for post-closure assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for post-closure care of any of the facilities covered by the mechanism, the Administrative Authority may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.
- h) Release of the owner or operator from the requirements of §23.54 -- When an owner or operator has completed, to the satisfaction of the Administrative Authority, all post-closure care requirements in accordance with the post-closure plan, the Administrative Authority will, at the request of the owner or operator, notify him in writing that he is no longer required by §23.54 to maintain financial assurance for post-closure care of the particular facility.

23.55 Use of a mechanism for financial assurance of both closure and post-closure care -- An owner or operator may satisfy the requirements for financial assurance for both closure and post-closure care for one or more facilities by using a trust fund, surety bond, letter of credit, insurance, financial test, or corporate guarantee that meets the specifications for the mechanism in both §§23.52 and 23.54. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism has been established and maintained for financial assurance of closure and post-closure care.

23.56 Liability requirements

- a) Coverage for sudden accidental occurrences -- An owner or operator of a hazardous waste treatment, storage, or disposal facility, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for sudden accidental occurrences in the amount of at least \$1 million per occurrence with an annual aggregate of at least \$2 million, exclusive of legal defense costs. This liability coverage may be demonstrated in one of three ways, as specified in §§23.56a)1), 23.56a)2), and 23.56a)3).

- 1) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in this paragraph.

Each insurance policy must be amended by attachment of the Hazardous Waste Facility Liability Endorsement or evidenced by a Certificate of Liability Insurance. The wording of the endorsement must be identical to the wording specified in §20.10i). The wording of the certificate of insurance must be identical to the wording specified in §20.10j). The owner or operator must submit a signed duplicate original of the endorsement or the certificate of insurance to the Administrative Authority. If requested by the Administrative Authority, the owner or operator must provide a signed duplicate original of the insurance policy.

Each insurance policy must be issued by an insurer which, at a minimum, is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one of more States, and authorized to transact business in Louisiana.

- 2) An owner or operator may meet the requirements of this section by passing a financial test for liability coverage as specified in §23.56f).
- 3) An owner or operator may demonstrate the required liability coverage through use of both the financial test and insurance as these mechanisms are specified in this Section. The amounts of coverage demonstrated must total at least the minimum amounts required by §23.56.

- b) Coverage for nonsudden accidental occurrences -- An owner or operator of a surface impoundment, landfill, or land treatment facility which is used to manage hazardous waste, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least \$3 million per occurrence with an annual aggregate of at least \$6 million, exclusive of legal defense costs. This liability coverage may be demonstrated in one of three ways, as specified in §§23.56b)1), 23.56b)2), and 23.56b)3).

- 1) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in this paragraph.

Each insurance policy must be amended by attachment of the Hazardous Waste Facility Liability Endorsement or evidenced by a Certificate of Liability Insurance. The wording of the endorsement must be identical to the wording specified in §20.10i). The wording of the certificate of insurance must be identical to the wording specified in §20.10j). The owner or operator must submit a signed duplicate original of the endorsement or the certificate of insurance to the Administrative Authority. If requested by the Administrative Authority, the owner or operator must provide a signed duplicate original of the insurance policy.

Each insurance policy must be issued by an insurer which, at a minimum, is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer in one or more States, and authorized to transact business in Louisiana.

- 2) An owner or operator may meet the requirements of §23.56b) by passing a financial test for liability coverage as specified in §23.56f).
- 3) An owner or operator may demonstrate the required liability coverage through use of both the financial test and insurance as these mechanisms are specified in §23.56. The amounts of coverage must total at least the minimum amounts required by this paragraph.
- c) Request for variance -- If an owner or operator can demonstrate to the satisfaction of the Administrative Authority that the levels of financial responsibility required by §§23.56a) or 23.56b) are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the owner or operator may obtain a variance from the Administrative Authority. The request for a variance must be submitted in writing to the Administrative Authority. If granted, the variance will take the form of an adjusted level of required liability coverage, such level to be based on the Administrative Authority's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. The Administrative Authority may require an owner or operator who requests a

variance to provide such technical and engineering information as is deemed necessary by the Administrative Authority to determine a level of financial responsibility other than that required by §23.56a) or §23.56b). The Administrative Authority will process a variance request as if it were a permit modification request. Notwithstanding any other provision, the Administrative Authority may hold a public hearing at his discretion or whenever he finds, on the basis of requests for a public hearing, a significant degree of public interest in a tentative decision to grant a variance.

- d) Adjustments by the Administrative Authority -- If the Administrative Authority determines that the levels of financial responsibility required by §§23.56a) or 23.56b) are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the Administrative Authority may adjust the level of financial responsibility required by §23.56a) or §23.56b) as may be necessary to protect human health and the environment. This adjusted level will be based on the Administrative Authority's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. In addition, if the Administrative Authority determines that there is a significant risk to human health and the environment from nonsudden accidental occurrences resulting from the operations of a facility that is not a surface impoundment, landfill, or land treatment facility, he may require that an owner or operator of the facility comply with §23.56b). An owner or operator must furnish to the Administrative Authority, within a reasonable time, any information which the Administrative Authority requests to determine whether cause exists for such adjustments of level or type of coverage. The Administrative Authority will process an adjustment of the level of required coverage as if it were a permit modification. Notwithstanding any other provision, the Administrative Authority may hold a public hearing at his discretion or whenever he finds, on the basis of requests for a public hearing, a significant degree of public interest in a tentative decision to adjust the level or type of required coverage.
- e) Period of coverage -- An owner or operator must continuously provide liability coverage for a facility as required by this Section until certifications of closure of the facility, as specified in §23.44, are received by the Administrative Authority.
- f) Financial test for liability coverage
 - 1) An owner or operator may satisfy the requirements of this Section by demonstrating that he passes a financial test as specified in §23.56f). To pass this test the owner or operator must meet the criteria of either of the following:

The owner or operator must have:

Net working capital and tangible net worth each at least six times the amount of liability coverage to be demonstrated by this test; and

Tangible net worth of at least \$10 million; and

Assets in the United States amounting to either: (1) at least ninety percent of his total assets; or (2) at least six times the amount of liability coverage to be demonstrated by this test.

The owner or operator must have:

A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's; and

Tangible net worth of at least \$10 million; and

Tangible net worth at least six times the amount of liability coverage to be demonstrated by this test; and

Assets located in the United States amounting to either: (1) at least ninety percent of his total assets; or (2) at least six times the amount of liability coverage to be demonstrated by this test.

- 2) The phrase "amount of liability coverage" as used in §23.56f)1) refers to the annual aggregate amounts for which coverage is required under §§23.56a) and 23.56b).
- 3) To demonstrate that he meets this test, the owner or operator must submit the following three items to the Administrative Authority:

A letter signed by the owner's or operator's chief financial officer and worded as specified in §20.10g). If an owner or operator is using the financial test to demonstrate both assurance for closure or post-closure care, and liability coverage, he must submit the letter specified in §20.10g) to cover both forms of financial responsibility; a separate letter as specified in §20.10f) is not required.

A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year.

A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

- 4) The owner or operator may obtain a one-time extension of the time allowed for submission of the documents specified in §23.56f)3) if the fiscal year of the owner or operator ends during the 90 days prior to the effective date of these regulations and if the year-end financial statements for that fiscal year will be audited by an independent certified public accountant. The extension will end no later than 90 days after the end of the owner's or operator's fiscal year. To obtain the extension, the owner's or operator's chief financial officer must send a letter to the Administrative Authority. This letter from the chief financial officer must:
 - a) Request the extension;
 - b) Certify that he has grounds to believe that the owner or operator meets the criteria of the financial test;
 - c) Specify for each facility to be covered by the test the EPA Identification Number, name, address, the amount of liability coverage and, when applicable, current closure and post-closure cost estimates to be covered by the test;
 - d) Specify the date ending the owner's or operator's last complete fiscal year before the effective date of these regulations;
 - e) Specify the date, no later than 90 days after the end of such fiscal year, when he will submit the documents specified in §23.56f)3); and
 - f) Certify that the year-end financial statement of the owner or operator for such fiscal year will be audited by an independent certified public accountant.
- 5) After the initial submission of items specified in §23.56f)3), the owner or operator must send updated information to the Administrative Authority within ninety days after the close of each succeeding fiscal year. This information must consist of all three items specified in §23.56f)3).
- 6) If the owner or operator no longer meets the requirements of §23.56f)1), he must obtain insurance for the entire amount of required liability coverage as specified in §23.56. Evidence of insurance must be submitted to the Administrative Authority within ninety days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the test requirements.
- 7) The Administrative Authority may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements [see §23.56f)3)]. An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Administrative Authority will evaluate other qualifications on an individual basis. The owner or operator must provide

evidence of insurance for the entire amount of required liability coverage as specified in §23.56 within thirty days after notification of disallowance.

23.57 Incapacity of owners or operators, guarantors, or financial institutions

- a) An owner or operator must notify the Administrative Authority by certified mail of the commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming the owner or operator as debtor, within ten days after commencement of the proceeding. A guarantor of a corporate guarantee as specified in §§23.52e) and 23.54e) must make such a notification if he is named as debtor, as required under the terms of the corporate guarantee [see §20.10h)].
- b) An owner or operator who fulfills the requirements of §§23.52, 23.54, or 23.56 by obtaining a trust fund, surety bond, letter of credit, or insurance policy will be deemed to be without the required financial assurance or liability coverage in the event of bankruptcy of the trustee or issuing institution, or a suspension or revocation of the authority of the trustee institution to act as trustee or of the institution issuing the surety bond, letter of credit, or insurance policy to issue such instruments. The owner or operator must establish other financial assurance or liability coverage within sixty days after such an event.

23.58 Reserved

Subchapter VIII
Containers

- 23.59 Applicability -- Owners and operators of all hazardous waste facilities with interim status that store hazardous wastes in containers are subject to the requirements of this Chapter and Chapter 12 as indicated below.
- 23.60 Condition of containers -- Interim status facilities are subject to the requirements of §12.2.
- 23.61 Compatibility of waste with containers -- Interim status facilities are subject to the requirements of §12.3.
- 23.62 Management of containers -- Interim status facilities are subject to the requirements of §12.4.
- 23.63 Inspections -- Interim status facilities are subject to the requirements of §12.5a).
- 23.64 Special requirements for ignitable or reactive waste -- Interim status facilities are subject to the requirements of §12.7.
- 23.65 Special requirements for incompatible wastes -- Interim status facilities are subject to the requirements of §12.8.

Subchapter IX
Tanks

23.66 Applicability -- Owners and operators of all hazardous waste facilities with interim status that store hazardous wastes in tanks are subject to the requirements of this Chapter and §11.1.

23.67 General operating requirements

- a) Treatment or storage of hazardous waste in tanks must comply with §23.11.
- b) Hazardous waste or treatment reagents must not be placed in a tank if they could cause the tank or its inner liner to rupture, leak, corrode, or otherwise fail before the end of its intended life.
- c) Uncovered tanks must be operated to ensure at least 60 centimeters (2 feet) of freeboard, unless the tank is equipped with a containment structure (e.g., dike or trench), a drainage control system, or a diversion structure (e.g., standby tanks) with a capacity that equals or exceeds the volume of the top 60 centimeters (2 feet) of the tank.
- d) Where hazardous waste is continuously fed into a tank, the tank must be equipped with a means to stop this inflow (e.g., a waste feed cutoff system or by-pass system to a standby tank).

These systems are intended to be used in the event of a leak or overflow from the tank due to a system failure (e.g., a malfunction in the treatment process, a crack in the tank, etc.).

23.68 Waste analysis and trial tests

- a) In addition to the waste analysis required by §9.10, the waste analysis in §§23.68b) or 23.68c) is required whenever a tank is to be used to:
 - 1) Chemically treat or store a hazardous waste which is substantially different from waste previously treated or stored in that tank; or
 - 2) Chemically treat hazardous waste with a substantially different process than any previously used in that tank.
- b) The following waste analysis is required when the conditions of §23.68a) are met:
 - 1) Conduct waste analyses and trial treatment or storage tests (e.g., bench scale or pilot plant scale tests); or
 - 2) Obtain written, documented information on similar storage or treatment of similar waste under similar operating conditions.
- c) The waste analysis is required to show that this proposed treatment or storage will meet all applicable requirements of §§23.67a) and 23.67b). As required by §9.10, the waste analysis plan must include analyses needed to comply with §§23.72 and 23.73.

- d) The owner or operator must place the results from each waste analysis and trial test, or the documented information, in the operating record of the facility as required by §9.15.

23.69 Design and operating requirements -- Interim status facilities are subject to the requirements of §11.2b)

23.70 Inspections

- a) The owner or operator of a tank must inspect, where present:
 - 1) Discharge control equipment (e.g., waste feed cut-off systems, bypass systems, and drainage systems), at least once each operating day, to ensure that it is in good working order;
 - 2) Data gathered from monitoring equipment (e.g., pressure and temperature gauges), at least once each operating day, to ensure that the tank is being operated according to its design;
 - 3) The level of waste in the tank, at least once each operating day, to ensure compliance with §23.67(c);
 - 4) The construction materials of the tank, at least weekly, to detect corrosion or leaking of fixtures or seams; and
 - 5) The construction materials of, and the area immediately surrounding, discharge confinement structures (e.g., dikes), at least weekly, to detect erosion or obvious signs of leakage (e.g., wet spots or dead vegetation).
- b) As required by §23.9c), the owner or operator must remedy any deterioration or malfunction he finds.

23.71 Closure -- Interim status facilities are subject to the requirements of §11.6.

23.72 Special requirements for ignitable or reactive wastes -- Interim status facilities are subject to the requirements of §11.4.

23.73 Special requirements for incompatible wastes -- Interim status facilities are subject to the requirements of §11.5.

Subchapter X Surface Impoundments

23.74 Applicability

The regulations in this Subchapter apply to owners and operators of facilities that use surface impoundments to treat, store, or dispose of hazardous waste, except as §1.3d) provides otherwise.

23.75 General operating requirements -- A surface impoundment must maintain enough freeboard to prevent any overtopping of the dike by overfilling, wave action, or a storm. There must be at least sixty centimeters (two feet) of freeboard.

23.76 Containment system -- All earthen dikes must have a protective cover, such as grass, shale, or rock, to minimize wind and water erosion and to preserve their structural integrity.

23.77 Waste analysis and trial tests

- a) In addition to the waste analyses required by §9.10, whenever a surface impoundment is to be used to:
 - 1) Chemically treat a hazardous waste which is substantially different from waste previously treated in that impoundment; or
 - 2) Chemically treat hazardous waste with a substantially different process than any previously used in that impoundment.
- b) The owner or operator must, before treating the different waste or using the different process:
 - 1) Conduct waste analyses and trial treatment tests (e.g., bench scale or pilot plant scale tests); or
 - 2) Obtain written, documented information on similar treatment of similar waste under similar operating conditions; to show that this treatment will comply with §23.11b).

23.78 Inspections -- The owner or operator must inspect:

- a) The freeboard level at least once each operating day to ensure compliance with §23.75.
- b) The surface impoundment, including dikes and vegetation surrounding the dike, at least once a week to detect any leaks, deterioration, or failures in the impoundment.

23.79 Closure and post-closure

- a) At closure, the owner or operator may elect to remove from the impoundment:
 - 1) Standing liquids;
 - 2) Waste and waste residues;
 - 3) The liner, if any; and
 - 4) Underlying and surrounding contaminated soil.

- b) If the owner or operator removes all the impoundment materials in §23.79a) or can demonstrate that the waste does not possess any of the characteristics of a hazardous waste specified in Chapter 24 or has been excluded under §1.3d), or that none of the materials listed in §23.79a) remaining at any state of removal are hazardous wastes, the impoundment is not further subject to the requirements of the LHWR.
- c) If the owner or operator does not remove all the impoundment materials in §23.79a), or does not make the demonstration under §23.79b), he must close the impoundment and provide post-closure care as for a landfill under Subchapter XIII of this Chapter. If necessary, to support the final cover specified in the appropriate plan, the owner or operator must treat remaining liquids, residues, and soils by removal of liquids, drying, or other means.

23.80 Special requirements for ignitable or reactive waste

- a) Ignitable or reactive waste must not be placed in a surface impoundment, unless:
 - 1) The waste is treated, rendered, or mixed before or immediately after placement in the impoundment so that the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under §§24.2a) or 24.2c), and §23.11b) is complied with; or
 - 2) The surface impoundment is used solely for emergencies.

23.81 Special requirements for incompatible wastes

Incompatible wastes or incompatible wastes and materials (see GMLHWR) must not be placed in the same surface impoundment, unless §23.11b) is complied with.

Subchapter XI Waste Piles

23.82 Applicability

The regulations in this Subchapter apply to owners and operators of facilities that treat or store hazardous waste in piles, except as §1.3d) provides otherwise. Alternatively, a pile of hazardous waste may be managed as a landfill under Subchapter XIII.

23.83 Protection from wind

The owner or operator of a pile containing hazardous waste which could be subject to dispersal by wind must cover or otherwise manage the pile so that wind dispersal is controlled.

23.84 Waste analysis

- a) In addition to the waste analyses required by §9.10, the owner or operator must analyze a representative sample of waste from each incoming movement before adding the waste to any existing pile, unless:
 - 1) The only wastes the facility receives which are amenable to piling are compatible with each other; or
 - 2) The waste received is compatible with the waste in the pile to which it is to be added.
 - b) The analysis conducted must differentiate between the types of hazardous waste the owner or operator places in piles, so that the mixing of incompatible waste does not inadvertently occur. The analysis must include a visual comparison of color and texture.
 - c) As required by §9.10, the waste analysis plan must include analyses needed to comply with §§13.6 and 13.7.
 - d) As required by §9.15, the owner or operator must place the results of this analysis in the operating record of the facility.
- 23.85 Containment -- If collected leachate or run-off is discharged through a point source to waters of the United States, it is subject to the requirements of Section 402 of the Clean Water Act, as amended. If a leachate or run-off from a pile is a hazardous waste, then either:
- a) The pile must be placed on an impermeable base that is compatible with the waste under the conditions of treatment or storage;
 - 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 twenty-five year storm;
 - c) The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a twenty-four hour, twenty-five year storm; and
 - d) Empty, or otherwise expeditiously manage, collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems to maintain design capacity of the system; or
 - e) The pile must be protected from precipitation and run-on by some other means and no liquids or waste containing free liquids may be placed in the pile.
- 23.86 Special requirements for ignitable or reactive waste
- a) Ignitable or reactive wastes must not be placed in a pile, unless:

- 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 under Chapter 2 and complies with §23.11b); or
- 2) The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

23.87 Special requirements for incompatible wastes

- a) Owners or operators having interim status for waste piles used to manage incompatible wastes must comply with the requirements of §13.7.

23.88 Closure and post-closure care

- a) At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste if they are identified as such in Chapter 24; or
- b) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in paragraph a) of this section, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills. (Subchapter XIII)

Subchapter XII Land Treatment

23.89 Applicability -- The regulations in this Subchapter apply to owners and operators of hazardous waste land treatment facilities with interim status, except as §1.3d) provides otherwise.

23.90 General and operating requirements -- Interim status facilities are subject to the requirements of §§15.2a) through 15.2g).

23.91 Waste analysis -- In addition to the waste analyses required by §9.10, before placing a hazardous waste in or on a land treatment facility, the owner or operator must:

- a) Determine the concentration of any substances which exceed the maximum concentrations in Table 5 of §24.2, that cause the waste to exhibit the EP toxicity characteristic;
- b) Determine the concentrations of any substances which cause the waste to be listed in §24.1 as a hazardous waste.

23.92 Food-chain crops -- No produce may be allowed to grow on a landfarm. Additionally, grasses and other cover plants may not be used for grazing or hay production for domestic livestock.

23.93 Unsaturated zone (zone of aeration) monitoring

- a) The owner or operator must have in writing, and must implement, an unsaturated zone monitoring plan which is designed to:
 - 1) Detect the vertical migration of hazardous waste and hazardous waste constituents under the active portion of the land treatment facility; and
 - 2) Provide information on the background concentrations of the hazardous waste and hazardous waste constituents in similar but untreated soils nearby. This background monitoring must be conducted before or in conjunction with the monitoring required in §23.93a)1).
- b) The unsaturated zone monitoring plan must include, at a minimum:
 - 1) Soil monitoring using soil cores; and
 - 2) Soil-pore water monitoring using devices such as lysimeters.
- c) To comply with §23.93a)1) of this Section, the owner or operator must demonstrate in his unsaturated zone monitoring plan that:
 - 1) The depth at which soil and soil-pore water samples are to be taken is below the depth to which the waste is incorporated into the soil;
 - 2) The number of soil and soil-pore water samples to be taken is based on the variability of:
 - The hazardous waste constituents as identified in §§23.91a) and 23.91b), in the waste and in the soil; and
 - The soil type(s); and
 - 3) The frequency and timing of soil and soil-pore water sampling is based on the frequency, time, and rate of waste application, proximity to groundwater, and soil permeability.
- d) The owner or operator must keep at the facility his unsaturated zone monitoring plan, and the rationale used in developing this plan.
- e) The owner or operator must analyze the soil and soil-pore water samples for the hazardous waste constituents that were found in the waste during the waste analysis under §§23.91a) and 23.91b).

23.94 Recordkeeping -- Interim status facilities are subject to the requirements of §15.7.

23.95 Closure and post-closure

- a) In the closure plan under §23.41b) and the post-closure plan under §23.46b), the owner or operator must address the following objectives and indicate how they will be achieved:

- 1) Control of the migration of hazardous waste and hazardous waste constituents from the land treatment area into the groundwater;
 - 2) Control of the release of contaminated run-off from the facility into surface water; and
 - 3) Control of the release of airborne particulate contaminants caused by wind erosion.
 - 4) Complies with food-chain crops §23.92.
- b) The owner or operator must consider at least the following factors in addressing the closure and post-closure care objectives of §23.95a):
- 1) Type and amount of hazardous waste and hazardous waste constituents applied to the land treatment facility;
 - 2) The mobility and the expected rate of migration of the hazardous waste and hazardous waste constituents;
 - 3) Site location, topography, and surrounding land use, with respect to the potential effects of pollutant migration (e.g., proximity to groundwater, surface water, and drinking water sources);
 - 4) Climate, including amount, frequency, and pH of precipitation;
 - 5) Geological and soil profiles, and surface and subsurface hydrology, of the site, and soil characteristics, including cation exchange capacity, total organic carbon, and pH;
 - 6) Unsaturated zone monitoring information obtained under §23.93; and
 - 7) Type, concentration, and depth of migration of hazardous waste constituents in the soil as compared to their background concentrations.
- c) The owner or operator must consider at least the following methods in addressing the closure and post-closure care objectives of §23.95a):
- 1) Removal of contaminated soils;
 - 2) Placement of a final cover, considering:

Functions of the cover (e.g., infiltration control, erosion, and run-off control, and wind erosion control);

Characteristics of the cover, including material final surface contours, thickness, porosity, and permeability, slope, length of run of slope, and type of vegetation on the cover; and
 - 3) Groundwater monitoring.

- d) In addition to the requirements of Subchapter VI of this Chapter, during the closure period the owner or operator of a land treatment facility must:
- 1) Continue unsaturated zone monitoring in a manner and frequency specified in the closure plan, except that soil-pore liquid monitoring may be terminated ninety days after the last application of waste to the treatment zone;
 - 2) Maintain the run-on control system required under §15.2c);
 - 3) Maintain the run-off management system required under §15.2d); and
 - 4) Control particulate matter which may be subject to wind dispersal.
- e) For the purpose of complying with §23.44, when closure is completed the owner or operator may submit to the Administrative Authority certification both by the owner or operator and 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.
- f) In addition to the requirements of §23.45, during the post-closure care period the owner or operator of a land treatment unit must:
- 1) Continue soil-pore monitoring by collecting and analyzing samples in a manner and frequency specified in the post-closure plan;
 - 2) Restrict access to the unit as appropriate for its post-closure use;
 - 3) Assure that growth of food chain crops complies with §15.5; and
 - 4) Control wind dispersal of hazardous waste.
- 23.96 Special requirements for ignitable or reactive waste -- Interim status facilities are subject to the requirements of §15.8.
- 23.97 Special requirements for incompatible wastes -- Interim status facilities are subject to the requirements of §15.9.

Subchapter XIII Landfills

- 23.98 Applicability -- The regulations in this Subchapter apply to owners and operators of facilities that dispose of hazardous waste in landfills, except as §1.3d) provides otherwise. A waste pile used as a disposal facility is a landfill and is governed by this Subchapter.
- 23.99 General operating requirements -- Interim status facilities must comply with §§14.2c), 14.2d), 14.2e), 14.2f), 14.2h), 14.2i), 14.2j), and any new landfill cell or extension of an existing landfill cell must comply with §§14.2a and 14.2b).

23.100 Surveying and recordkeeping -- Interim status facilities must comply with §14.5.

23.101 Closure and post-closure

- a) The owner or operator must place a final cover over the landfill, and the closure plan under §23.41 must specify the function and design of the cover. In the post-closure plan under §23.46, the owner or operator must include the post-closure care requirements of §23.101d).
- b) In the closure and post-closure plans, the owner or operator must address the following objectives and indicate how they will be achieved:
 - 1) Control of pollutant migration from the facility via groundwater, surface water, and air;
 - 2) Control of surface water infiltration, including prevention of pooling; and
 - 3) Prevention of erosion. *removed by CL 15*
- c) The owner or operator must consider at least the following factors in addressing the closure and post-closure care objectives of §23.101b).
 - 1) Type and amount of hazardous waste and hazardous waste constituents in the landfill;
 - 2) The mobility and the expected rate of migration of the hazardous waste and hazardous waste constituents;
 - 3) Site location, topography, and surrounding land use, with respect to the potential effects of pollutant migration (e.g., proximity to groundwater, surface water, and drinking water sources);
 - 4) Climate, including amount, frequency, and pH of precipitation;
 - 5) Characteristics of the cover including material, final surface contours, thickness, porosity and permeability, slope, length of run of slope, and type of vegetation on the cover, and
 - 6) Geological and soil profiles and surface and subsurface hydrology of the site.
- became (b) by CL 15* d) In addition to the requirements of §23.45, during the post-closure care period, the owner or operator of a hazardous waste landfill must:
 - 1) Maintain the function and integrity of the final cover as specified in the approved closure plan;
 - 2) Maintain and monitor the leachate collection, removal, and treatment system (if there is one present in the landfill) to prevent excess accumulation of leachate in the system. If the collected leachate is a hazardous waste under Chapter 24, it must be managed as a hazardous

waste in accordance with all applicable requirements of Chapters 7, 8, and 23. If the collected leachate is discharged through a point source to waters of the United States, it is subject to the requirements of Section 402 of the Clean Water Act, as amended;

- 3) Maintain and monitor the gas collection and control system (if there is one present in the landfill) to control the vertical and horizontal escape of gases;
- 4) Protect and maintain surveyed benchmarks; and
- 5) Restrict access to the landfill as appropriate for its post-closure use.

23.102 Special requirements for ignitable or reactive waste

- a) Except as provided in §23.102b) and in §23.106, 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:
 - 1) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste in the LHWR; and
 - 2) Section 23.11b) is complied with.
- b) Solid ignitable wastes in containers may be landfilled without meeting the requirements of §23.102a), 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:
 - 1) 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; and
 - 2) Must be covered daily with soil or other non-combustible material to minimize the potential for ignition of the wastes; and
 - 3) 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.

23.103 Special requirements for incompatible wastes -- Incompatible wastes, or incompatible wastes and materials, must not be placed in the same landfill cell, unless §23.11b) is complied with.

23.104 Special requirements for liquid waste -- Interim status facilities must comply with §14.8.

23.105 Special requirements for containers -- Interim status facilities must comply with §14.9.

23.106 Disposal of small containers of hazardous waste in overpacked drums (lab packs) -- Lab packs may be placed in a landfill if the following requirements are met:

- a) Hazardous waste must be packaged in non-leaking inside containers. The inside containers must be designed and constructed of a material that will not react dangerously with, be decomposed by, or be ignited by the contained waste. Inside containers must be tightly and securely sealed. The inside containers must be of the size and type specified in the Louisiana Department of Public Safety (LDPS) hazardous materials/hazardous waste regulations (Parts 173, 178, and 179), if those regulations specify a particular inside container for the waste;
- b) The inside containers must be overpacked in an open head LDPS specification metal shipping container (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;
- c) The absorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers in accordance with §23.11b).
- d) Incompatible wastes, as defined in Chapter 2, must not be placed in the same outside container; and
- e) Reactive wastes, other than cyanide or sulfide-bearing waste, as defined in Chapter 2, must be treated or rendered nonreactive prior to packaging in accordance with §§23.106a) through 23.106d). Cyanide and sulfide-bearing reactive waste may be packed in accordance with §§23.106a) through 23.106d) without first being treated or rendered nonreactive.

Subchapter XIV Incinerators

23.107 Applicability -- Incinerators at interim status facilities are subject to the requirements of this Chapter and §§17.3a), 17.3b) and 17.11.

23.108 Waste analysis

- a) In addition to the waste analyses required by §9.10, the owner or operator must sufficiently analyze any waste which has not previously been burned in his incinerator to establish steady state (normal) operating conditions (including waste and auxiliary fuel feed and air flow) and to determine the type of pollutants which might be emitted. At a minimum, the analysis must determine:
 - 1) Heating value of the waste;
 - 2) Halogen and sulfur content in the waste; and

- 3) Concentrations in the waste of lead and mercury, unless the owner or operator has written, documented data that show that the element is not present.
 - b) The owner or operator must place the results from each waste analysis, or the documented information, in the operating record of the facility, as required by §9.15b)6).
- 23.109 General operating requirements -- During start-up and shutdown of an incinerator, the owner or operator must not feed hazardous waste unless the incinerator is at steady state (normal) conditions of operation, including steady state operating temperature and air flow.
- 23.110 Monitoring and inspections -- The owner or operator must conduct, as a minimum, the following monitoring and inspections when incinerating hazardous waste:
- a) Monitoring of instruments which relate to combustion and emission control (e.g., those instruments measuring waste feed, auxiliary fuel feed, air flow, incinerator temperature, scrubber flow, scrubber pH, and relevant level controls) at least every fifteen minutes. Appropriate corrections to maintain steady state combustion conditions must be made immediately either automatically or by the operator; and
 - b) Daily inspection of the complete incinerator and associated equipment (e.g., pumps, valves, conveyors, pipes, etc.) for leaks, spills, and fugitive emissions. Also, all emergency shutdown controls and system alarms must be inspected daily to assure proper operation.
- 23.111 Closure -- At closure, the owner or operator must remove all hazardous waste and hazardous waste residues (including but not limited to ash, scrubber waters, and scrubber sludges) from the incinerator. Unless the owner or operator can demonstrate, in accordance with Chapter 24 that the residue removed from his incinerator is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of these regulations.

Subchapter XV Thermal Treatment

- 23.112 Applicability -- The regulations in this Subchapter apply to owners and operators of facilities that thermally treat hazardous waste in devices other than incinerators except as §1.3d) provides otherwise. Thermal treatment in incinerators is subject to the requirements of Subchapter XIV.
- 23.113 General operating requirements -- Before adding hazardous waste, the owner or operator must bring his thermal treatment process to steady state (normal) conditions of operation, including steady state operating temperature, using auxiliary fuel or other means, unless the process is a non-continuous (batch) thermal treatment process which requires a complete thermal cycle to treat a discrete quantity of hazardous waste.

23.114 Waste analysis -- In addition to the waste analyses required by §9.10, the owner or operator must sufficiently analyze any waste which he has not previously treated in his thermal process to enable him to establish steady state (normal) or other appropriate (for a non-continuous process) operating conditions (including waste and auxiliary fuel feed) and to determine the type of pollutants which might be emitted. As required by §9.15, the owner or operator must place the results from each waste analysis, or the documented information, in the operating record of the facility. At a minimum, the analysis must determine:

- a) Heating value of the waste;
- b) Halogen content and sulfur content in the waste; and
- c) Concentrations in the waste of lead and mercury, unless the owner or operator has written, documented data that show that the element is not present.

23.115 Monitoring and inspections -- The owner or operator must conduct, as a minimum, the following monitoring and inspections when thermally treating hazardous waste:

- a) Existing instruments which relate to temperature and emission control (if an emission control device is present), must be monitored at least every fifteen minutes. Appropriate corrections to maintain steady state or other appropriate thermal treatment conditions must be made immediately, either automatically or by the operator. Instruments which relate to temperature and emission control would normally include those measuring waste feed, auxiliary fuel feed, treatment process temperature, and relevant process flow and level controls;
- b) Visual observation of the stack plume (emissions), where present, at least hourly for normal appearance (color and opacity). The operator must immediately make any indicated operating corrections necessary to return any visible emissions to their normal appearance; and
- c) Inspection of the complete thermal treatment process and associated equipment (pumps, valves, conveyors, pipes, etc.) at least daily for leaks, spills, and fugitive emissions, and all emergency shutdown controls and system alarms must be checked to assure proper operation.

23.116 Closure

- a) At closure, the owner or operator must remove all hazardous waste and hazardous waste residues (including, but not limited to, ash) from the thermal treatment process or equipment.
- b) At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with Chapter 24, that any solid waste removed from his thermal treatment process or equipment is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of these Regulations.

23.117 ~~Open Burner~~ 66
 23.118 ~~Interim Status~~
 23.119 ~~Applic.~~ ~~Chapter~~ ~~operator reg.~~

23.120 - Waste analysis

9.10a)1), the owner or operator must conduct waste analyses and trial treatment tests (e.g., bench scale or pilot plant scale tests), or obtain written, documented information on similar treatment of similar waste under similar operating conditions, to show that this proposed treatment will meet all applicable requirements of §§23.119a) and 23.119b), before treating the different waste or using the different method, whenever:

- a) A hazardous waste which is substantially different from waste previously treated in a treatment process or equipment at the facility is to be treated in that process or equipment; or
- b) A substantially different process than any previously used at the facility is to be used to chemically treat hazardous waste.

23.121 Inspections

- a) The owner or operator of a treatment facility must inspect, where present:
 - 1) Discharge control and safety equipment (e.g., waste feed cut-off systems, by-pass systems, drainage systems, and pressure relief systems) at least once each operating day, to ensure good working order;
 - 2) Data gathered from monitoring equipment (e.g., pressure and temperature gauges), at least once each operating day, to ensure that the treatment process or equipment is being operated according to its design;
 - 3) The construction materials of the treatment process or equipment, at least weekly, to detect corrosion or leaking of fixtures or seams; and
 - 4) The construction materials of, and the area immediately surrounding, discharge confinement structures (e.g., dikes), at least weekly, to detect erosion or obvious signs of leakage (e.g., wet spots or dead vegetation).
- b) As required by §9.5c), the owner or operator must remedy any deterioration or malfunction he finds.

23.122 Closure -- At closure, all hazardous waste and hazardous waste residues must be removed from treatment processes or equipment, discharge control equipment, and discharge confinement structures. At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with Chapter 24, that any solid waste removed from this treatment process or equipment is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of these regulations.

23.123 Special requirements for ignitable or reactive waste -- Ignitable or reactive waste must not be placed in a treatment process or equipment unless:

- a) The waste is treated, rendered, or mixed before or immediately after placement in the treatment process or equipment so that the resulting

waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under §§24.2a), 24.2c), and §23.11 is complied with; or

- b) The waste is treated in such a way that it is protected from any material or conditions which may cause the waste to ignite or react.

23.124 Special requirements for incompatible wastes

- a) Incompatible wastes, or incompatible wastes and materials (see GMLHWR) must not be placed in the same treatment process or equipment, unless §23.11 is complied with.
- b) Hazardous waste must not be placed in unwashed treatment equipment which previously held an incompatible waste or material, unless §23.11 is complied with.

CHAPTER 24

LISTS OF HAZARDOUS WASTES

- 24.1 Category I Hazardous Wastes -- Category I hazardous wastes are chemicals and process streams whose hazardous nature has been prescribed by prior determination.

[Comment: Chapter 24 is divided into two sections: Category I Hazardous Wastes which consist of Hazardous Wastes from nonspecific and specific sources (F & K wastes), acute Hazardous Wastes (P wastes), and Toxic Wastes (U wastes) (§24.1); and Category II Hazardous Wastes which consist of wastes which are ignitable, corrosive, reactive, or toxic (§24.2). Hazard codes are defined as follows for the listed Hazardous Wastes.

Ignitable waste	(I)
Corrosive waste	(C)
Reactive waste	(R)
EP toxic waste	(E)
Acute hazardous waste	(H)
Toxic waste	(T)

The industry and EPA Hazardous Waste numbers are used to identify specific hazardous wastes and the hazard codes are used to identify the hazardous waste characteristics.]

- a) Hazardous waste from nonspecific sources are listed in Table 1.

TABLE 1. HAZARDOUS WASTES FROM NONSPECIFIC SOURCES.

Industry and EPA hazardous waste no. Generic:	Hazard code	Hazardous waste
F001	T	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.
F002	T	The following spent halogenated solvents: tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, and trichlorofluoromethane; and the still bottoms from the recovery of these solvents.
(continued)		

TABLE 1. (continued)

Industry and EPA hazardous waste no.	Hazard code	Hazardous waste
F003	I	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.
F004	T	The following spent non-halogenated solvents: cresols and cresylic acid, and nitrobenzene; and the still bottoms from the recovery of these solvents.
F005	I,T	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.
F006	T	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.
F019	T	Wastewater treatment sludges from the chemical conversion coating of aluminum.
F007	R,T	Spent cyanide plating bath solutions from electroplating operations (except for precious metals electroplating spent cyanide plating bath solutions).
F008	R,T	Plating bath sludges from the bottom of plating baths from electroplating operations where cyanides are used in the process (except for precious metals electroplating plating bath sludges).
F009	R,T	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process (except for precious metals electroplating spent stripping and cleaning bath solutions).
F010	R,T	Quenching bath sludge from oil baths from metal heat treating operations where cyanides are used in the process (except for precious metals heat-treating quenching bath sludges).

(continued)

TABLE 1. (continued)

Industry and EPA hazardous waste no.	Hazard code	Hazardous waste
F011	R,T	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations (except for precious metals heat treating spent cyanide solutions from salt bath pot cleaning).
F012	T	Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process (except for precious metals heat treating quenching wastewater treatment sludges).

b) Hazardous waste from specific sources are listed in Table 2.

TABLE 2. HAZARDOUS WASTES FROM SPECIFIC SOURCES.

Industry and EPA hazardous waste no.	Hazard code	Hazardous waste
Wood preservation K001	T	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.
Inorganic pigments K002	T	Wastewater treatment sludge from the production of chrome yellow and orange pigments.
K003	T	Wastewater treatment sludge from the production of molybdate orange pigments.
K004	T	Wastewater treatment sludge from the production of zinc yellow pigments.
K005	T	Wastewater treatment sludge from the production of chrome green pigments.
K006	T	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).
K007	T	Wastewater treatment sludge from the production of iron blue pigments.

(continued)

TABLE 2. (continued)

Industry and EPA hazardous waste no.	Hazard code	Hazardous waste
K008	T	Oven residue from the production of chrome oxide green pigments.
Organic chemicals K009	T	Distillation bottoms from the production of acetaldehyde from ethylene.
K010	T	Distillation side cuts from the production of acetaldehyde from ethylene.
K011	R,T	Bottom stream from the wastewater stripper in the production of acrylonitrile.
K013	R,T	Bottom stream from the acetonitrile column in the production of acrylonitrile.
K014	T	Bottoms from the acetonitrile purification column in the production of acrylonitrile.
K015	T	Still bottoms from the distillation of benzyl chloride.
K016	T	Heavy ends of distillation residues from the production of carbon tetrachloride.
K017	T	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.
K018	T	Heavy ends from the fractionation column in ethyl chloride production.
K019	T	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.
K020	T	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.
K021	T	Aqueous spent antimony catalyst waste from fluoromethanes production.
K022	T	Distillation bottom tars from the production of phenol/acetone from cumene.

(continued)

TABLE 2. (continued)

Industry and EPA hazardous waste no.	Hazard code	Hazardous waste
K023	T	Distillation light ends from the production of phthalic anhydride from naphthalene.
K024	T	Distillation bottoms from the production of phthalic anhydride from ortho-xylene.
K093	T	Distillation light ends from the production of phthalic anhydride from ortho-xylene.
K094	T	Distillation bottoms from the production of phthalic anhydride from ortho-xylene.
K025	T	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.
K026	T	Stripping still tails from the production of methyl ethyl pyridines.
K027	R,T	Centrifuge and distillation residues from toluene diisocyanate production.
K028	T	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.
K029	T	Waste from the product steam stripper in the production of 1,1,1-trichloroethane.
K095	T	Distillation bottoms from the production of 1,1,1-trichloroethane.
K096	T	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.
K030	T	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene.
K083	T	Distillation bottoms from aniline production.
K103	T	Process residues from aniline extraction from the production of aniline.
K104	T	Combined wastewater streams generated from nitrobenzene/aniline production.

(continued)

TABLE 2. (continued)

Industry and EPA hazardous waste no.	Hazard code	Hazardous waste
K085	T	Distillation or fractionation column bottoms from the production of chlorobenzenes.
K105	T	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.
Inorganic chemicals		
K071	T	Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.
K073	T	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.
K106	T	Wastewater treatment sludge from the mercury cell process in chlorine production.
Pesticides		
K031	T	By-product salts generated in the production of MSMA and cacodylic acid.
K032	T	Wastewater treatment sludge from the production of chlordane.
K033	T	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.
K034	T	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.
K097	T	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.
K035	T	Wastewater treatment sludges generated in the production of creosote.
K036	T	Still bottoms from toluene reclamation distillation in the production of disulfoton.
K037	T	Wastewater treatment sludges from the production of disulfoton.

(continued)

TABLE 2. (continued)

Industry and EPA hazardous waste no.	Hazard code	Hazardous waste
K038	T	Wastewater from the washing and stripping of phorate production.
K039	T	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.
K040	T	Wastewater treatment sludge from the production of phorate.
K041	T	Wastewater treatment sludge from the production of toxaphene.
K098	T	Untreated process wastewater from the production of toxaphene.
K042	T	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.
K043	T	2,6-Dichlorophenol waste from the production of 2,4-D.
K099	T	Untreated wastewater from the production of 2,4-D.
Explosives K044	R	Wastewater treatment sludges from the manufacturing and processing of explosives.
K045	R	Spent carbon from the treatment of wastewater containing explosives.
K046	T	Wastewater treatment sludges from the manufacturing, formulation, and loading of lead-based initiating compounds.
K047	R	Pink/red water from TNT operations.
Petroleum refining K048	T	Dissolved air flotation (DAF) float from the petroleum refining industry.
K049	T	Slop oil emulsion solids from the petroleum refining industry.
K050	T	Heat exchanger bundle cleaning sludge from the petroleum refining industry.
K051	T	API separator sludge from the petroleum refining industry.

(continued)

TABLE 2. (continued)

Industry and EPA hazardous waste no.	Hazard code	Hazardous waste
K052	T	Tank bottoms (leaded) from the petroleum refining industry.
Iron and steel K061	T	Emission control dust/sludge from the primary production of steel in electric furnaces.
K062	C,T	Spent pickle liquor from steel finishing operations.
Secondary lead K069	T	Emission control dust/sludge from secondary lead smelting.
K100	T	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.
Veterinary pharmaceuticals K084	T	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.
K101	T	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.
K102	T	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.
Ink formulation K086	T	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.
Coking K060	T	Ammonia still lime sludge from coking operations.
K087	T	Decanter tank tar sludge from coking operations.

c) Discarded commercial chemical products, off-specification species, containers, and spill residues thereof -- The following materials or items are hazardous wastes if and when they are discarded or intended to be discarded:

- 1) Any commercial chemical product, or manufacturing chemical intermediate having the generic name listed in §§24.1d) or 24.1e);

- 2) Any off-specification commercial chemical product or manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in §§24.1d) and 24.1e).
- 3) Any container or inner liner removed from a container that has been used to hold any commercial chemical product or manufacturing chemical intermediate having the generic name listed in §24.1d), or any container or inner liner removed from a container that has been used to hold any off-specification chemical product or manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in §24.1d), unless:

The container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate; or

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

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; and

- 4) Any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill, into or on any land or water, of:

Any commercial chemical product or manufacturing chemical intermediate having the generic name listed in §§24.1d) or 24.1e), or

Any off-specification chemical product and manufacturing chemical intermediate which, if it met specifications would have the generic name listed in §§24.1d) or 24.1e).

[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. It does not refer to a material, such as a manufacturing process waste, that contains any of the substances listed in §§24.1d) or 24.1e). Where a manufacturing process waste is deemed to be a hazardous waste because it contains a substance listed in §§24.1d) or 24.1e) such waste will be listed in either §§24.1a) or 24.1b) or will be identified as a hazardous waste by the characteristics set forth in §24.2.]

- d) The commercial chemical products manufacturing chemical intermediates, or off-specification commercial chemical products or manufacturing chemical intermediates referred to in §§24.1c)1) through 24.1c)4), are identified as acute hazardous wastes (H). These wastes and their corresponding EPA Hazardous Waste Numbers are listed in Table 3.

TABLE 3. ACUTE HAZARDOUS WASTES.

EPA hazardous waste number	Hazardous waste
P023	Acetaldehyde, chloro-
P002	Acetamide, N-(aminothioxomethyl)-
P057	Acetamide, 2-fluoro-
P058	Acetic acid, fluoro-, sodium salt
P066	Acetimidic acid, N-((methylcarbamoyl)oxy)thio-, methyl ester
P001	3-(alpha-acetonylbenzyl)-4-hydroxycoumarin and salts
P002	1-Acetyl-2-thiourea
P003	Acrolein
P070	Aldicarb
P004	Aldrin
P005	Allyl alcohol
P006	Aluminum phosphide
P007	5-(aminomethyl)-3-isoxazolol
P008	4-a 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-Benzenediol, 4-(1-hydroxy-2-(methylamino)ethyl)
P014	Benzenethiol
P028	Benzyl chloride
P015	Beryllium dust
P016	Bis(chloromethyl) ether
P017	Bromoacetone
P018	Brucine
P021	Calcium cyanide
P123	Camphene, octachloro-
P103	Carbamimidoselenoic acid
P022	Carbon bisulfide
P022	Carbon disulfide
P095	Carbonyl chloride
P033	Chlorine cyanide
P023	Chloroacetaldehyde
P024	p-Chloroaniline
P026	1-(o-Chlorophenyl)thiourea

(continued)

TABLE 3. (continued)

EPA hazardous waste number	Hazardous waste
P027	3-Chloropropionitrile
P029	Copper cyanides
P030	Cyanides (soluble cyanide salts), not elsewhere specified
P031	Cyanogen
P033	Cyanogen chloride
P036	Dichlorophenylarsine
P037	Dieldrin
P038	Diethylarsine
P039	0,0-Diethyl S-(2-(ethylthio)ethyl) phosphorodithioate
P041	Diethyl-p-nitrophenyl phosphate
P040	0,0-Diethyl 0-pyrazinyl phosphorothioate
P043	Diisopropyl fluorophosphate
P044	Dimethoate
P045	3,3-Dimethyl-1-(methylthio)-2-butanone, O-((methylamino)carbonyl) oxime
P071	0,0-Dimethyl 0-p-nitrophenyl phosphorothioate
P082	Dimethylnitrosamine
P046	alpha, alpha-Dimethylphenethylamine
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-2-phenyl-
P084	Ethenamine, 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,T)
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

(continued)

TABLE 3. (continued)

EPA hazardous waste number	Hazardous waste
P060	1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo, endo dimethanonaphthalene
P004	1,2,3,4,10,10-Hexachloro-1,4,4,4a,5,8,8a-hexahydro-1,4:5,8-endo, exo-dimethanonaphthalene
P060	Hexachlorohexahydro-exo, exo-dimethanonaphthalene
P062	Hexaethyl tetraphosphate
P116	Hydrazinecarbothioamide
P068	Hydrazine, methyl-
P063	Hydrocyanic acid
P063	Hydrogen cyanide
P096	Hydrogen phosphide
P064	Isocyanic acid, methyl ester
P007	3(2H)-Isoxazolone, 5-(aminomethyl)-
P092	Mercury, (acetato-0)phenyl-
P065	Mercury fulminate (R,T)
P016	Methane, oxybis(chloro-
P112	Methane, tetranitro-(R)
P118	Methanethiol, trichloro-
P059	4,7-Methano-1H-indene,1,4,5,6,7,8,8-heptachloro-3a, 4,7,7a-tetrahydro-
P066	Methomyl
P067	2-Methylaziridine
P068	Methyl hydrazine
P064	Methyl isocyanate
P069	2-Methyl lactonitrile
P071	Methyl parathion
P072	alpha-Naphthylthiourea
P073	Nickel carbonyl
P074	Nickel cyanide
P074	Nickel (II) cyanide
P073	Nickel tetracarbonyl
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	Octamethylpyrophosphoramidate
P087	Osmium oxide
P087	Osmium tetroxide
P068	7-Oxabicyclo(2.2.1)heptane-2,3-dicarboxylic acid

(continued)

TABLE 3. (continued)

EPA hazardous waste number	Hazardous waste
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-trinitro-, ammonium salt (R)
P036	Phenyl dichloroarsine
P092	Phenylmercuric acetate
P093	N-Phenylthiourea
P094	Phorate
P095	Phosgene
P096	Phosphine
P041	Phosphoric acid, diethyl p-nitrophenyl ester
P044	Phosphorodithioic acid, 0, 0-dimethyl S-(2-(methylamino)-2-oxoethyl)- ester
P043	Phosphorofluoric acid, 0, bis(1-methylethyl)-ester
P094	Phosphorophthioic acid, 0, 0-diethyl S-(ethylthio)methyl ester
P089	Phosphorothioic acid, 0, 0-diethyl 0-(p-nitrophenyl) ester
P040	Phosphorothioic acid, 0, 0-diethyl 0-pyrazinyl ester
P097	Phosphorothioic acid, 0, 0-dimethyl 0-(p-((dimethylamino)-sulfonyl)- phenyl)ester
P110	Plumbane, tetraethyl-
P098	Potassium cyanide
P099	Potassium silver cyanide
P070	Propanal, 2-methyl-2-(methylthio)-, 0-((methylamino)carbonyl)oxime
P101	Propanenitrile
P027	Propanenitrile, 3-chloro-
P069	Propanenitrile, 2-hydroxy-2-methyl-
P081	1,2,3-Propanetriol, trinitrate-(R)
P017	2-Propanone, 1-bromo-
P102	Propargyl alcohol
P003	2-Propenal
P005	2-Propen-1-ol
P067	1,2-Propylenimine
P102	2-Propyn-1-ol
P008	4-Pyridinamine
P075	Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, 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

(continued)

TABLE 3. (continued)

EPA hazardous waste number	Hazardous waste
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	Thiofanox
P049	Thioimidodicarbonic 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
P121	Zinc cyanide
P122	Zinc phosphide (R,T)

- e) Commercial chemical products or manufacturing intermediates or off-specification commercial chemical products are those referred to in §§24.1c)1), 24.1c)2), and 24.1c)4). These wastes are not in the acutely hazardous (H) category, but are identified as toxic wastes (T) unless otherwise designated. These wastes and their corresponding EPA Hazardous Waste Numbers are listed in Table 4.

TABLE 4. TOXIC WASTES.

EPA hazardous waste number	Hazardous waste
U001	Acetaldehyde(I)
U034	Acetaldehyde, trichloro-
U187	Acetamide, N-(4-ethoxyphenyl)-

(continued)

TABLE 4. (continued)

EPA hazardous waste number	Hazardous waste
U005	Acetamide, N-9H-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)
U004	Acetophenone
U005	2-Acetylaminofluorene
U006	Acetyl chloride (C,R,T)
U006	Acrylamide
U008	Acrylic acid (I)
U009	Acrylonitrile
U150	Alanine, 3-(p-bis(2-chloroethyl)amino)phenyl-, L-
U011	Amitrole
U012	Aniline (I,T)
U014	Auramine
U015	Azaserine
U010	Azirino (2',3':3,4)pyrrolo(1,2-a)indole-4,7-dione, 6-amino-8(((amino-carbonyl) oxy)methyl)-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-,
U157	Benz(j)aceanthrylene, 1,2-dihydro-3-methyl-
U016	Benz(c)acridine
U016	3,4-Benzacridine
U017	Benzal chloride
U018	Benz(a)anthracene
U018	1,2-Benzanthracene
U094	1,2-Benzanthracene, 7,12-dimethyl-
U012	Benzenamine (I,T)
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'-methylenebis(2-chloro-
U222	Benzenamine, 2-methyl-, hydrochloride
U181	Benzenamine, 2-methyl-5-nitro
U019	Benzene (I,T)
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-ethylhexyl)) 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

(continued)

TABLE 4. (continued)

EPA hazardous waste number	Hazardous waste
U070	Benzene, 1,2-dichloro-
U071	Benzene, 1,3-dichloro-
U072	Benzene, 1,4-dichloro-
U017	Benzene, (dichloromethyl)-
U223	Benzene, 1,3-diisocyanatomethyl-(R,T)
U239	Benzene, dimethyl-(I,T)
U201	1,3-Benzenediol
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,T)
U183	Benzene, pentachloro-
U185	Benzene, pentachloro-nitro-
U020	Benzenesulfonic acid chloride (C,R)
U020	Benzenesulfonyl chloride (C,R)
U207	Benzene, 1,2,4,5-tetrachloro-
U023	Benzene, (trichloromethyl)-(C,R,T)
U234	Benzene, 1,3,5-trinitro-(R,T)
U021	Benzidine
U202	1,2-Benzisothiazolin-3-one,1,1,-dioxide
U120	Benzo(j,k)fluorene
U022	Benzo(a)pyrene
U022	3,4-Benzopyrene
U197	p-Benzoquinone
U023	Benzotrichloride (C,R,T)
U050	1,2-Benzphenanthrene
U085	2,2'-Bioxirane (I,T)
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

(continued)

TABLE 4. (continued)

EPA hazardous waste number	Hazardous waste
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,T)
U160	2-Butanone peroxide (R,T)
U053	2-Butenal
U074	2-Butene, 1,4-dichloro-(I,T)
U031	n-Butyl alcohol (I)
U136	Cacodylic acid
U032	Calcium chromate
U236	Carbamic acid, ethyl ester
U178	Carbamic acid, methylnitroso-, ethyl ester
U176	Carbamide, N-ethyl-N-nitroso-
U177	Carbamide, N-methyl-N-nitroso-
U219	Carbamide, thio-
U097	Carbamoyl chloride, dimethyl-
U215	Carbonic acid, dithallium (i) salt
U156	Carbonochloridic acid, methyl ester (I,T)
U033	Carbon oxyfluoride (R,T)
U211	Carbon tetrachloride
U033	Carbonyl fluoride (R,T)
U034	Chloral
U035	Chlorambucil
U036	Chlordane, technical
U026	Chlornaphazine
U037	Chlorobenzene
U039	4-Chloro-m-cresol
U041	1-Chloro-2,3-epoxypropane
U042	2-Chloroethyl vinyl ether
U044	Chloroform
U046	Chloromethyl methyl ether
U047	beta-Chloronaphthalene
U048	o-Chlorophenol
U049	4-Chloro-o-toluidine, hydrochloride
U032	Chromic acid, calcium salt
U050	Chrysene
U051	Creosote
U052	Cresols
U052	Cresylic acid
U053	Crotonaldehyde
U055	Cumene (I)
U246	Cyanogen bromide

(continued)

TABLE 4. (continued)

EPA hazardous waste number	Hazardous waste
U197	1,4-Cyclohexadienedione-
U056	Cyclohexane (I)
U057	Cyclohexanone (I)
U130	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexa-chloro-
U058	Cyclophosphamide-
U240	2,44-D, salts and esters
U059	Daunomycin
U060	DDD
U061	DDT
U142	Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta(c,d)-pentalen-2-one
U062	Diallate
U133	Diamine (R,T)
U221	Diaminotoluene
U053	Dibenz(a,h)anthracene
U063	1,2:5,6-Dibenzanthracene
U064	1,2:7,8-Dibenzopyrene
U064	Dibenz(a,i)pyrene
U066	1,2-Dibromo-3-chloropropane
U069	Dibutyl phthalate
U062	S-(2,3-Dichloroallyl) diisopropylthiocarbamate
U070	o-Dichlorobenzene
U071	m-Dichlorobenzene
U072	p-Dichlorobenzene
U073	3,3'-Dichlorobenzidine
U074	1,4-Dichloro-2-butene (I,T)
U075	Dichlorodifluoromethane
U192	3,5-Dichloro-N-(1,1-dimethyl-2-propynyl) benzamide
U060	Dichloro diphenyl dichloroethane
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-Dichloropropene
U085	1,2:3,4-Diepoxybutane (I,T)
U108	1,4-Diethylene dioxide
U086	N,N-Diethylhydrazine
U087	O,O-Diethyl-S-methyl-dithiophosphate
U088	Diethyl phthalate
U089	Diethylstilbestrol
U149	1,3-Dihydro-3,6-pyridazinedione

(continued)

TABLE 4. (continued)

EPA hazardous waste number	Hazardous waste
U090	Dihydrosafrole
U091	3,3'-Dimethoxybenzidine
U092	Dimethylamine (I)
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 (I)
U111	Di-N-propylnitrosamine
U001	Ethanal (I)
U174	Ethanamine, N-ethyl-N-nitroso-
U067	Ethane, 1,2-dibromo-
U076	Ethane, 1,1-dichloro-
U077	Ethane, 1,2-dichloro-
U114	1,2-Ethanediylobiscarbamodithioic acid
U131	Ethane, 1,1,1,2,2,2-hexachloro-
U024	Ethane, 1,1'-(methylenebis(oxy))bis(2-chloro-
U003	Ethanenitrile (I,T)
U117	Ethane, 1,1'-oxybis-(I)
U025	Ethane, 1,1'-oxybis (2-chloro-
U184	Ethane, pentachloro-
U208	Ethane, 1,1,1,2-tetrachloro-
U209	Ethane, 1,1,2,2-tetrachloro-
U218	Ethanethioamide
U227	Ethane, 1,1,2-trichloro-
U247	Ethane, 1,1,1,-trichloro-2,2-bis(p-methoxy-phenyl)
U043	Ethene, chloro-
U042	Ethene, 2-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-

(continued)

TABLE 4. (continued)

EPA hazardous waste number	Hazardous waste
U006	Ethanoyl chloride (C,R,T)
U112	Ethyl acetate (I)
U113	Ethyl acrylate (I)
U238	Ethyl carbamate (urethan)
U038	Ethyl 4,4'-dichlorobenzilate
U114	Ethylenebis(dithiocarbamic acid)
U067	Ethylene dibromide
U077	Ethylene dichloride
U115	Ethylene oxide (I,T)
U116	Ethylene thiourea
U117	Ethyl ether (I)
U076	Ethylidene dichloride
U118	Ethylmethacrylate
U119	Ethyl methanesulfonate
U139	Ferric dextran
U120	Fluoranthene
U122	Formaldehyde
U123	Formic acid (C,T)
U124	Furan (I)
U125	2-Furancarboxaldehyde (I)
U147	2,5-furandione
U213	Furan, tetrahydro-(I)
U125	Furfural (I)
U124	Furfuran (I)
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,T)
U086	Hydrazine, 1,2-diethyl-
U098	Hydrazine, 1,1-dimethyl-
U099	Hydrazine, 1,2-dimethyl-
U109	Hydrazine, 1,2-diphenyl-
U134	Hydrofluoric acid (C,T)
U134	Hydrogen fluoride (C,T)
U135	Hydrogen sulfide
U096	Hydroperoxide, 1-methyl-1-phenylethyl-(R)
U136	Hydroxydimethylarsine oxide

(continued)

TABLE 4. (continued)

EPA hazardous waste number	Hazardous waste
U116	2-Imidazolidinethione
U137	Indeno (1,2,3-cd)pyrene
U139	Iron dextran
U140	Isobutyl alcohol (I,T)
U141	Isosafrole
U142	Kepone
U143	Lasiocarpine
U144	Lead acetate
U145	Lead phosphate
U146	Lead subacetate
U129	Lindane
U147	Maleic anhydride
U148	Maleic hydrazide
U149	Malononitrile
U150	Melphalan
U151	Mercury
U152	Methacrylonitrile (I,T)
U092	Methanimine, N-methyl-(I)
U029	Methane, bromo-
U045	Methane, chloro-(I,T)
U046	Methane, chloromethoxy-
U068	Methane, dibromo-
U080	Methane, dichloro-
U075	Methane, dichlorodifluoro-
U138	Methane, iodo-
U119	Methanesulfonic acid, ethyl ester
U211	Methane, tetrachloro-
U121	Methane, trichlorofluoro
U153	Methanethiol (I,T)
U225	Methane, tribromo-
U044	Methane, trichloro-
U123	Methanoic acid (C,T)
U121	Methane, trichlorofluoro-
U123	Methanoic acid (C,T)
U036	4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-
U154	Methanol (I)
U155	Methapyrilene
U247	Methoxychlor
U154	Methyl alcohol (I)
U029	Methyl bromide
U186	1-Methylbutadiene (I)
U045	Methyl chloride (I,T)
U156	Methyl chlorocarbonate (I,T)
U226	Methylchloroform

(continued)

TABLE 4. (continued)

EPA hazardous waste number	Hazardous waste
U157	3-Methycholanthrene
U158	4,4'-Methylenebis(2-chloraniline)
U132	2,2'-Methylenebis(3,4,6-trichlorophenol)
U068	Methylene bromide
U080	Methylene chloride
U122	Methylene oxide
U159	Methyl ethyl ketone (I,T)
U160	Methyl ethyl ketone peroxide (R,T)
U138	Methyl iodide
U161	Methyl isobutyl ketone (I)
U162	Methyl methacrylate (I,T)
U163	N-Methyl-N'-nitro-N-nitrosoguanidine
U161	4-Methyl-2-pentanone (I)
U164	Methylthiouracil
U010	Mitomycin C
U059	5,12-Naphthacenedione, (8S-cis)-8-acetyl-10-((3-amino-2,3,6-trideoxy- alpha-L-lyxo-hexopyranosyl)oxyl)-7,8,9,10-tetrahydro-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-chloromethyl)-
U169	Nitrobenzene (I,T)
U170	p-Nitrophenol
U171	2-Nitropropane (I)
U172	N-Nitrosodi-n-butylamine
U173	N-Nitrosodiethanolamine
U174	N-Nitrosodiethylamine
U111	N-Nitroso-N-propylamine
U176	N-Nitroso-N-ethylurea
U177	N-Nitroso-N-methylurea
U178	N-Nitroso-N-methylurethane
U179	N-Nitrosopiperidine
U180	N-Nitrosopyrrolidine
U181	5-Nitro-o-toluidine
U193	1,2-Oxathiolane, 2,2-dioxide

(continued)

TABLE 4. (continued)

EPA hazardous waste number	Hazardous waste
U058	2H,1,3,2-Oxazaphosphorine, 2-(bis(2-chloro-ethyl)amino)tetrahydro-, oxide 2-
U115	Oxirane (I,T)
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	Phosphorodithioic acid, O,O-diethyl-S-methylester
U189	Phosphorous sulfide (R)
U190	Phthalic anhydride
U191	2-Picoline
U192	Pronamide
U194	1-Propanamine (I,T)
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-Propanal, 2-methyl-(I,T)
U002	2-Propanone (I)
U007	2-Propenamide
U084	Propene, 1,3-dichloro-
U243	1-Propene, 1,1,2,3,3,3-hexachloro-
U009	2-Propenenitrile

(continued)

TABLE 4. (continued)

EPA hazardous waste number	Hazardous waste
U152	2-Propenenitrile, 2-methyl-(I,T)
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,T)
U233	Propionic acid, 2-(2,4,5-trichlorophenoxy)-
U194	n-Propylamine (I,T)
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	Pyrrole, tetrahydro-N-nitroso-
U200	Reserpine
U201	Resorcinol
U202	Saccharin and salts
U203	Safrole
U204	Selenious acid
U204	Selenium dioxide
U205	Selenium disulfide (R,T)
U015	L-serine, diazoacetate (ester)
U233	Silvex
U088	4,4'-Stilbenediol, alpha, alpha'-diethyl-
U206	Streptozotocin
U135	Sulfur hydride
U103	Sulfuric acid, dimethyl ester
U189	Sulfur phosphide (R)
U205	Sulfur selenide (R,T)
U232	2,4,5-T
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 (I,T)
U219	Thiourea
U244	Thiram

(continued)

TABLE 4. (continued)

EPA hazardous waste number	Hazardous waste
U220	Toluene
U221	Tholuenediamine
U223	Toluene diisocyanate (R,T)
U222	O-Toluidine hydrochloride
U011	1H-1,2,4-Triazol-3-amine
U226	1,1,1-Trichloroethane
U227	1,1,2-Trichloroethylene
U228	Trichloroethene
U228	Trichloroethylene
U121	2,4,5-Trichlorophenol
U230	2,4,5-Trichlorophenol
U231	2,4,6-Trichlorophenol
U232	2,4,5-Trichlorophenoxycetic 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
U239	Xylene (I)
U200	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-(3,4,5-trimethoxybenzoyl)oxy)-, methyl ester

24.2 Category II Hazardous Wastes -- Category II hazardous wastes are wastes designated as hazardous based on classical analytical procedures (see GMLHWR and SW846 for guidance on the procedures). There are four hazardous waste categories for wastes not otherwise characterized: ignitability; corrosivity; reactivity; and toxicity. The LHWR apply to those materials that exhibit the characteristics of ignitability, corrosivity, reactivity, and/or toxicity.

a) Ignitability -- A solid waste that exhibits the characteristic of ignitability, but is not listed as a hazardous waste in §24.1 has the EPA Hazardous Waste Number of D001. A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

- 1) It is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume, and has flash point less than 60°C (140°F), as determined by a Pensky-Martens Closed Cup Tester, using the test method specified in ASTM Standard D-93-79 or D-93-80 or a Setaflash Closed Cup Tester, using the test method specified in ASTM Standard D-3278-78 or as determined by an equivalent test method approved by the Administrative Authority under procedures set forth in §§1.3h) and 1.3i).

- 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) It is an ignitable compressed gas as defined in LDPS Regulation §173.300 and as determined by the test methods described in that regulation or equivalent test methods approved by the Administrative Authority under §1.3i).
 - 4) It is an oxidizer as defined in LDPS Regulations §173.151.
- b) Corrosivity -- A solid waste that exhibits the characteristic of corrosivity, but is not listed as a hazardous waste in §24.1, has the EPA Hazardous Waste Number of D002. A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:
- 1) It is aqueous and has a pH less than or equal to two or greater than or equal to twelve and one-half, as determined by a pH meter using either as specified in SW846 or the GMLHWR test method or an equivalent test method approved by the Administrative Authority under procedures set forth in §§1.3h) and 1.3i). The specified test method for pH is specified as Method 5.2 in SW846, "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods."
 - 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°C (130°F) as determined by the test method specified in National Association of Corrosion Engineers (NACE) Standard TM-01-69 as standardized in SW846, "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" or an equivalent test method approved by the Administrative Authority under the procedures set forth in §§1.3h) and 1.3i).
- c) Reactivity -- A solid waste that exhibits the characteristic of reactivity, but is not listed as a hazardous waste in §24.1, has the EPA Hazardous Waste Number of D003. A solid waste exhibits the characteristic of reactivity if a representative sample of the waste has any of the following properties:
- 1) It is normally unstable and readily undergoes violent change without detonating.
 - 2) It reacts violently with water.
 - 3) It forms potentially explosive mixtures with water.
 - 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.

- 5) It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between two and twelve and one-half, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.
 - 6) It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.
 - 7) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.
 - 8) It is a forbidden explosive as defined in LDPS Regulation §173.51, or a Class A explosive as defined in LDPS Regulation §173.53 or a Class B explosive as defined in LDPS Regulation §173.88.
- d) EP Toxicity -- A solid waste that exhibits the characteristic of EP toxicity, but is not listed as a hazardous waste in §24.1, has the EPA Hazardous Waste Number specified in Table 5 which corresponds to the toxic contaminant causing it to be hazardous. A solid waste exhibits the characteristic of EP toxicity if, using the test methods described in the GMLHWR or equivalent methods approved by the Administrative Authority under the procedures set forth in §§1.3h) and 1.3i), the extract from a representative sample of the waste contains any of the contaminants listed in Table 5 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.

TABLE 5. MAXIMUM CONCENTRATION OF
CONTAMINANTS FOR CHARACTERISTIC OF EP TOXICITY.

EPA hazardous waste no.	Maximum concentration (mg/l)	Contaminant
D004	5.0	Arsenic
D005	100.0	Barium
D006	1.0	Cadmium
D007	5.0	Chromium
D008	5.0	Lead
D009	0.2	Mercury
D010	1.0	Selenium
D011	5.0	Silver
D012	0.02	Endrin (1,2,3,4,10,10-hexachloro-1,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4-endo,endo-5,8-dimethano naphthalene)
D013	0.4	Lindane (1,2,3,4,5,6-hexachlorocyclohexane, gamma isomer)

(continued)

TABLE 5. (continued)

EPA hazardous waste no.	Maximum concentration (mg/l)	Contaminant
0014	10.0	Methoxychlor (1,1,1-trichloro-2,2,-bis [p-methoxy-phenyl]ethane)
0015	0.5	Toxaphene (C ₁₀ H ₁₀ Cl ₈ , technical chlorinated camphene, 67-69 percent chlorine)
0016	10.0	2,4-D (2,4-Dichlorophenoxyacetic acid)
0017	1.0	2,4,5-TP Silvex (2,4,5-trichlorophenoxypropionic acid)

24.3 Exclusions for Wastewaters -- The following mixtures of solid wastes and hazardous wastes listed in §24.1 are not hazardous wastes (except by application of §24.2) if the generator can demonstrate that the mixture consists of wastewater the discharge of which is subject to regulation under either Section 402 or Section 307(b) of the Clean Water Act (including wastewater at facilities which have eliminated the discharge of wastewater) and:

- a) One or more of the following spent solvents listed in §24.1a) - Carbon tetrachloride, tetrachloroethylene, trichorethylene - 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; or
- b) One or more of the following spent solvents listed in §24.1a) - Methylene chloride, 1,1,1-trichloroethane, chlorobenzene, o-dichlorobenzene, cresols, cresylic acid, nitrobenzene, toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, 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; or
- c) One of the following wastes listed in §24.1b) - Heat exchanger bundle cleaning sludge from the petroleum refining industry (EPA Hazardous Waste No. K-050); or
- d) A discarded commercial chemical product, or chemical intermediate listed in §§24.1d) and 24.1e) arising from de minimis losses of these materials from manufacturing operations in which these materials are used as raw materials or are produced in the manufacturing process. For purposes of this subparagraph, "de minimis" losses include those from normal material handling operations (e.g. spills from the unloading or transfer of materials from bins or other containers, leaks from pipes valves or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well-maintained pump packings and

- seals; sample purgings; relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; and rinse water from empty containers; or
- e) Wastewater resulting from laboratory operations containing toxic (T) wastes listed in §24.1 provided that the annualized average flow of laboratory wastewater does not exceed one percent of total wastewater flow into the headworks of the facility's wastewater treatment or pre-treatment system, or provided the wastes, combined annualized average concentration does not exceed one part per million in the headworks of the facility's wastewater treatment or pre-treatment facility. Toxic (T) wastes used in laboratories that are demonstrated not to be discharged to wastewater are not to be included in this calculation.
 - f) If the discharge under §§24.3a) through 24.3e) is into a system not owned by the generator, approval by the owner for the discharge is required.
 - g) Except for laboratory wastes in §24.3e, no waste previously separated shall be intentionally added to the wastewater for disposal.
 - h) The Administrative Authority may require analysis of a monthly grab sample indicative of the materials and hazardous degradation products for the materials covered in §§24.3a) and 24.3b) if not covered in the water discharge permit.