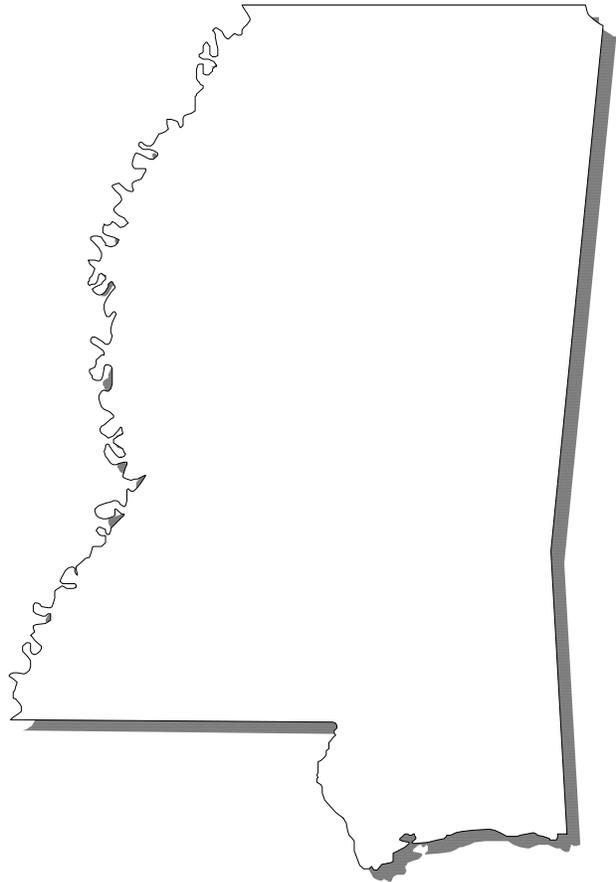


NONHAZARDOUS SOLID WASTE MANAGEMENT REGULATIONS



STATE OF MISSISSIPPI



**MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF POLLUTION CONTROL
P. O. Box 2261
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Amended February 22, 1996
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NONHAZARDOUS SOLID WASTE MANAGEMENT
REGULATIONS & CRITERIA
(APPROVED SEPTEMBER 23, 1993)
(AMENDED FEBRUARY 22, 1996)
(AMENDED APRIL 28, 2005)

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**NONHAZARDOUS SOLID WASTE MANAGEMENT REGULATIONS
MISSISSIPPI COMMISSION ON ENVIRONMENTAL QUALITY**

SECTION I. GENERAL INFORMATION REQUIREMENTS

A. Purpose, Scope and Applicability

1. The purpose of these regulations is to establish minimum State criteria under the Mississippi Solid Waste Law, as amended, for all solid waste management facilities. These minimum State criteria ensure the protection of human health and the environment. Statutory authority for these regulations includes Sections 17-17-27, 17-17-213, 17-17-229, 17-17-231, 21-27-207, and 49-17-17, Mississippi Code Annotated.
2. Sections II and III of these regulations apply to all solid waste management facilities as described therein, unless otherwise specified or excluded in paragraph B. of this section.
3. Section IV of these regulations applies to all landfills as described therein, unless otherwise specified or excluded in paragraph B. of this section.
4. Section V of these regulations applies to all transfer stations and to the storage and collection of solid wastes, unless otherwise specified or excluded in paragraph B. of this section.
5. Section VI of these regulations applies to all rubbish sites as described therein, unless otherwise specified or excluded in paragraph B. of this section.
6. Section VII of these regulations applies to all processing facilities as described therein, unless otherwise specified or excluded in paragraph B. of this section.
7. Section VIII of these regulations applies to all land application sites as described therein, unless otherwise specified or excluded in paragraph B. of this section.
8. Section IX of these regulations applies to all composting facilities as described therein, unless otherwise specified or excluded in paragraph B. of this section.
9. Solid waste management facilities failing to satisfy these criteria are considered to be open dumps for purposes of State waste management planning and are prohibited under Section 4005 of RCRA and the Mississippi Solid Waste Disposal Law, where there are criteria applicable to the facilities.
10. MSWLF units containing sewage sludge and failing to satisfy these criteria violate sections 309 and 405(e) of the Clean Water Act.
11. Solid waste management facilities which manage or dispose of sewage sludge must comply with 40 CFR 503 - Standards for the Use or Disposal of Sewage Sludge, which are incorporated herein and adopted by reference.

B. Exclusions

Notwithstanding anything in these regulations to the contrary, the management of solid is subject to these regulations except as described herein:

1. Hazardous wastes, which are subject to regulation under Subtitle C of the Federal Resource Conservation and Recovery Act (RCRA), as amended.
2. Domestic sewage or industrial wastewater that passes through a sewer system or wastewater treatment works and which is subject to regulation under any other state or federal environmental regulatory program. (Unless paragraph B.6. of this section is applicable, this exclusion does not apply to sludges and other materials once they are removed from the wastewater treatment works and disposed.)
3. Solid wastes generated by the growing or harvesting of agricultural crops or the raising of animals (including animal manure), where such wastes are uniformly and promptly returned to the soil as fertilizers or soil conditioners.
4. Rubbish that is legitimately used, reused, recycled or reclaimed, except for rubbish wastes which is composted or which, due to its chemical or physical constituency, would result in an endangerment to the environment or the public health, safety, or welfare.
5. Beneficial uses of solid wastes that have been determined by the Department to have physical and chemical qualities that make the wastes suitable for use as a replacement material for other raw materials or products. The Commission may adopt additional guidance or standards to evaluate such wastes for beneficial use.
6. Beneficial fill projects involving an area occupying less than one acre in size and for a duration of less than 120 days. Beneficial fill projects involving an area larger than one acre or for a duration of more than 120 days may be excluded upon the review and approval of the Permit Board or the Permit Board's designee.
7. Solid wastes generated in silviculture activities (e.g., timber harvesting slash and land clearing debris) whenever such wastes are left onsite.
8. Solid wastes processed on the same property on which wastes are generated in a processing facility owned and operated by the generator.
9. Solid wastes which do not constitute an endangerment to the environment or the public health, safety or welfare and which are disposed of on the same property on which wastes are generated, upon the concurrence of the Permit Board or the Permit Board's designee. In determining whether a solid waste constitutes an endangerment to the environment or the public health, safety or welfare, the Permit Board or the Permit Board's designee shall consider both the quantity and quality of the solid waste, the method of disposal, the location of the disposal property and any other factors which would warrant special concern. Garbage and rubbish containing garbage have been determined by the Commission and by the Department to have characteristics that constitutes an endangerment to the environment, public health, safety, and welfare of the general public within the meaning of Section 17-17-13, Mississippi Code Annotated, and accordingly, are not included in this exemption. All garbage and rubbish containing garbage regardless of where it is disposed or who the generator is, shall be managed in accordance with these regulations and other laws, rules, and regulations pertaining to the management of garbage and rubbish containing garbage.
10. Solid wastes contained within mining overburden that is returned to the mine site.

11. Wastes subject to regulation under Part C of the Federal Safe Drinking Water Act (Underground injection wells).
12. Wastes associated with the exploration or production of crude oil or natural gas, except where those wastes are disposed or processed in a commercial oil field exploration and production waste disposal facility.

C. Definitions

Unless otherwise noted, all terms contained in this regulation are defined by their plain meaning. This section contains definitions for terms that appear throughout this regulation. Additional definitions appear in the specific sections to which they apply.

"Active life" means the period of operation beginning with the initial receipt of solid waste and ending at completion of closure activities in accordance with these regulations.

"Active portion" means that part of a facility or unit that has received or is receiving wastes and that has not been closed in accordance with these regulations.

"Airport" means a public-use airport open to the public without prior permission and without restrictions within the physical capacities of available facilities.

"Aquifer" means a geological formation, group of formations, or portion of a formation capable of yielding significant quantities of groundwater to wells or springs.

"Areas susceptible to mass movement" means those areas of influence (i.e., areas characterized as having an active or substantial possibility of mass movement) where the movement of earth material at, beneath, or adjacent to the landfill, because of natural or man-induced events, results in the downslope transport of soil and rock material by means of gravitational influence. Areas of mass movement include, but are not limited to, landslides, avalanches, debris slides and flows, soil fluctuation, block sliding, and rock fall.

"Backyard composting or vermicomposting" means the composting of organic solid waste, such as yard waste and household garbage, generated by a homeowner or tenant of a single or multi-family residential unit, where such composting occurs at the site of the residence.

"Beneficial Fill" means the use of uncontaminated, non-water soluble, non-decomposable class II rubbish wastes to level an area or bring the area to a grade for beneficial purposes, where an earthen cover is applied upon completion of the fill. Such beneficial purposes must not be conducted for monetary compensation and may include landscaping, erosion control or repair, land stabilization, construction base preparations or other land improvements.

"Beneficial Use" means the legitimate use of a solid waste in the manufacture of a product or as a product for construction, soil amendment, or other purposes, where the solid waste replaces a natural or other resource material by its utilization.

"Bird hazard" means an increase in the likelihood of bird/aircraft collisions that may cause damage to the aircraft or injury to its occupants.

"Cation Exchange Capacity" means the sum of exchangeable cations a soil can absorb expressed in milliequivalents per 100 grams of soil as determined by sampling the soil to the depth of cultivation or solid waste placement, whichever is greater, and analyzing by the summation

method for distinctly acid soils or the sodium acetate method for neutral, calcareous or saline soils.

"Certificate of Coverage" means a written grant of coverage under an existing general permit.

"Church" means a permanent structure with a permanent foundation and constructed roof, floors, and walls, the primary use of which is for a group of persons to meet at least weekly for religious services.

"Class I Rubbish Site" means a rubbish site, which receives the types of rubbish described in Section VI.B. of these regulations.

"Class II Rubbish Site" means a rubbish site, which receives only the type of rubbish described in Section VI.C. of these regulations.

"Coastal wetlands" means such areas as defined by and subject to the Coastal Wetlands Protection Act.

"Commercial nonhazardous solid waste management facility" means any facility engaged in the storage, treatment, processing or disposal of nonhazardous solid waste for compensation or which accepts nonhazardous solid waste from more than one (1) generator not owned by the facility owner.

"Commercial oil field exploration and production waste disposal" means storage, treatment, recovery, processing, disposal or acceptance of oil field exploration and production waste from more than one (1) generator or for a fee.

"Commercial solid waste" means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial wastes.

"Commercial waste incinerator" means an incinerator which burns solid waste received from more than one generator or for compensation, but excluding those which burn only wood or paper waste.

"Commission" means the Mississippi Commission on Environmental Quality.

"Composite liner" means a system consisting of two components; the upper component must consist of a minimum 30-mil flexible membrane liner (FML), and the lower component must consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. FML components consisting of High Density Polyethylene (HDPE) shall be at least 60-mil thick. The FML component must be installed in direct and uniform contact with the compacted soil component.

"Compost" means the resulting product from a composting facility after having undergone biological decomposition, less residuals or recyclables, and which has been stabilized to a degree that it is potentially beneficial to plant growth and which is used or sold for use as a soil amendment, artificial topsoil, growing medium amendment, or other similar uses.

"Composting facility" means a facility which produces compost, excluding backyard composting or vermicomposting, or normal farming operations.

"Composting or compost plant" means an officially controlled method or operation whereby putrescible solid wastes are broken down through microbial action to a material offering no hazard or nuisance factors to public health or well-being.

"Cumulative pollutant loading rate" means the maximum amount of an inorganic pollutant that can be applied to an area of land.

"Curing" means the final stage of the composting process beginning in the later part of the mesophilic stage. During the curing process oxygen demand is reduced as the pile is recolonized by soil-dwelling micro-organisms. Once cured, the compost will not generate odors.

"Department" means the Mississippi Department of Environmental Quality.

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

"Disease vectors" means any rodents, birds, flies, mosquitoes, or other animals, including insects, capable of transmitting disease to humans.

"Displacement" means the relative movement of any two sides of a fault measured in any direction.

"Dumpster" means a specially constructed, removable waste container of any size designed to be mechanically picked up, dumped, and/or transported by a specially constructed vehicle designed for that purpose. (Commonly referred to as roll-off containers, green boxes, or commercial containers.)

"Endangered or threatened species" means any species listed as such pursuant to the Federal Endangered Species Act of 1973, as amended, or as defined by Section 49-5-105, Mississippi Code Annotated.

"Executive Director" means the Executive Director of the Mississippi Department of Environmental Quality.

"Existing facility" means a facility that has obtained a valid permit or other authorization from the Department before the effective date of the rules applicable to the facility, excluding those which have closed and are no longer authorized to receive solid waste.

"Existing MSWLF unit" means any municipal solid waste landfill unit that is receiving solid waste as of the effective date of these regulations. Waste placement in existing units must be consistent with past operating practices or modified practices to ensure good management.

"Facility" means all contiguous land and structures, other appurtenances, and improvements on the land used for the management of solid waste.

"Fault" means a fracture or a zone of fractures in any material along which strata on one side have been displaced with respect to that on the other side.

"Floodplain" means the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands that are inundated by the 100-year flood.

"Garbage" means putrescible animal and vegetable wastes resulting from the handling, preparation, cooking and consumption of food, including wastes from markets, storage facilities, handling and sale of produce and other food products, and excepting such materials that may be serviced by garbage grinders and handled as household sewage.

"Gas condensate" means the liquid generated as a result of gas recovery process(es) at an MSWLF unit.

"General Permit" means a permit, which applies to a specified category of similar facilities or activities that involve similar solid wastes

or have similar operating and/or monitoring requirements and restrictions.

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

"Hazardous wastes" means any waste or combination of waste of a solid, liquid, contained gaseous, or semisolid form which because of its quantity, concentration or physical, chemical or infectious characteristics, may (i) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or (ii) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed which are listed by the Environmental Protection Agency as hazardous wastes which exceed the threshold limits set forth in the Environmental Protection Agency regulations for classifying hazardous waste. Such wastes include, but are not limited to, those wastes which are toxic, corrosive, flammable, irritants, strong sensitizers, or which generate pressure through decomposition, heat or other means. Such wastes do not include those radioactive materials regulated pursuant to the Mississippi Radiation Protection Law of 1976, appearing in Section 45-14-1 et seq.

"Holocene" means the most recent epoch of the Quaternary period, extending from the end of the Pleistocene Epoch to the present.

"Household waste" means any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas).

"Incinerator" means a combustion device specifically designed for the destruction by high temperature burning of solid, semi-solid, liquid, or gaseous combustible waste and from which the solid residues contain little or no combustibles.

"Individual Permit" means a permit, which applies only to a specific facility or location.

"Industrial solid waste" means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of RCRA. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: Electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

"Karst terrains" means areas where karst topography, with its characteristic surface and subterranean features, is developed as the result of dissolution of limestone, dolomite, or other soluble rock. Characteristic physiographic features present in karst terrains include, but are not limited to, sinkholes, sinking streams, caves, large springs, and blind valleys.

"Lake or reservoir" means a body of water, not owned by the applicant or facility owner, having greater than ten acres of surface area at such time as the spillway overflows, with a primary purpose other than wastewater storage or treatment.

"Land Application" means the incorporation of waste into the soil, the

injection of waste below the land surface or other application of waste to the land for soil amendment or conditioning purposes or for biodegradation of the waste.

"Land application site" means a site upon which land application activities are conducted.

"Landfill" means a controlled area of land upon which solid wastes are deposited, compacted, and covered with no on-site burning of wastes, and which is so located, contoured, drained and operated so that it will not cause an adverse effect on public health or the environment. This term includes MSWLF units and other landfills, but not sites which receive only rubbish.

"Lateral expansion" means a horizontal expansion of the waste boundaries of an existing solid waste management facility. In the context of an MSWLF unit, this term includes previously permitted areas where such areas have not received wastes. In the context of other facilities, this term does not include previously permitted areas where such areas have not received waste.

"Leachate" means a liquid that has passed through or emerged from solid waste and contains soluble, suspended, or miscible materials removed from such waste.

"Liquid waste" means any waste material that is determined to contain "free liquids" as defined by Method 9095 (Paint Filter Liquids Test), as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" (EPA Pub. No. SW-846).

"Lithified earth material" means all rock, including all naturally occurring and naturally formed aggregates or masses of minerals or small particles of older rock that formed by crystallization of magma or by induration of loose sediments. This term does not include man-made materials, such as fill, concrete, and asphalt, or unconsolidated earth materials, soil, or regolith lying at or near the earth's surface.

"Lower explosive limit" means the lowest percent by volume of a mixture of explosive gases in air that will propagate a flame at 25°C and atmospheric pressure.

"Maximum horizontal acceleration in lithified earth material" means the maximum expected horizontal acceleration depicted on a seismic hazard map, with a 90 percent or greater probability that the acceleration will not be exceeded in 250 years, or the maximum expected horizontal acceleration based on a site-specific seismic risk assessment.

"Mesophilic stage" means the biological stage in the composting process characterized by active bacteria which favor a moderate temperature range of 20° to 45°C (68° to 113°F). It occurs later in the composting process after the thermophilic stage and is associated with a moderate rate of decomposition.

"Mining Overburden" means all earth and other natural materials which are removed to gain access to the desired minerals in the process of surface mining and shall mean such material before or after its removal by surface mining.

"Municipal solid waste" means any nonhazardous solid waste resulting from the operation of residential, commercial, governmental, industrial or institutional establishments except oil field exploration and production wastes and sewage sludge.

"Municipal solid waste management facility" means any land, building, plant, system, motor vehicles, equipment or other property, whether real, personal or mixed, or any combination of either thereof, used or

useful or capable of future use in the collection, storage, treatment, utilization recycling, processing, transporting or disposal of municipal solid waste, including transfer stations, incinerators, sanitary landfill facilities or other facilities necessary or desirable.

"Municipal solid waste landfill unit (MSWLF unit)" means a discrete area of land or an excavation that receives household waste (including ash from a municipal solid waste combustion facility) and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 CFR Part 257.2. A MSWLF unit may also receive other types of RCRA subtitle D wastes, such as commercial solid waste, nonhazardous sludge, small quantity generator waste and industrial solid waste. Such a landfill may be publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion.

"New facility" means a facility that has not received waste and which has not applied for or received a valid permit or other authorization from the Department to receive waste prior to the effective date of the rule applicable to the facility, including any land area of an existing facility that has not been previously permitted.

"New landfill" means a landfill that has not received waste and which has not applied for or received a valid permit or other authorization from the Department to receive waste prior to the effective date of the rule applicable to the landfill, including any land area of an existing landfill that has not been previously permitted.

"New MSWLF unit" means any municipal solid waste landfill unit that has not received waste prior to the effective date of the rule applicable to the unit.

"Normal Farming Operations" means the customary and generally accepted activities, practices, and procedures that farmers adopt or utilize on their own property for their own use during the production and preparation for market of poultry, livestock and associated farm products, and in the production and harvesting of crops, including agronomic, horticultural and silvicultural crops.

"Open burning" means the combustion of solid waste without the following:

1. control of combustion air to maintain adequate temperature for efficient combustion,
2. containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion, and
3. control of the emission of the combustion products.

"100-year flood" means a flood that has a 1-percent or greater chance of recurring in any given year or a flood of a magnitude equalled or exceeded once in 100 years on the average over a significantly long period.

"Outdoor facility" means a facility in which any solid waste management activity, including storage, is not adequately enclosed within a walled and roofed structure.

"Owner" means the person(s) who owns a facility or part of a facility and is responsible for the overall operation.

"Pathogens" means disease-causing organisms, including but not limited to certain bacteria, protozoa, viruses and viable helminth ova.

"Permit" means the formal written approval issued by the Mississippi Environmental Quality Permit Board to operate a solid waste management facility. A permit may be an individual permit, issued to a person, or a general permit, issued for a specified category of similar facilities or activities that involve similar solid wastes or have similar operating and/or monitoring requirements and restrictions.

"Permit Board" means the Mississippi Environmental Quality Permit Board, as established under Section 49-17-28, Mississippi Code Annotated.

"Permit Board's designee" means the Executive Director or a member of the Department staff.

"Person" means any individual, trust, firm, joint-stock company, public or private corporation (including a government corporation), partnership, association, state, or any agency or institution thereof, municipality, Commission, political subdivision of a state or any interstate body, and includes any officer or governing or managing body of any municipality, political subdivision, or the United States or any officer or employee thereof.

"Plant Available Nitrogen" means the amount of nitrogen available for plant uptake. It consists of all of the nitrate and ammonia present in the soil and a fraction of the organic nitrogen present which can be expected to be converted to an inorganic form during a given year.

"Polychlorinated biphenyls (PCBs)" means any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances, which contains such substances.

"Polychlorinated biphenyl (PCB) waste(s)" means those PCBs and PCB items that are subject to the disposal requirements of Subpart D of 40 CFR Part 761.

"Poor foundation conditions" means those areas where features exist which indicate that a natural or man-induced event may result in inadequate foundation support for the structural components of a landfill.

"Processing facility" means a facility, other than a composting facility or transfer station used to sort, shred, grind, bale, treat or otherwise process solid waste. The term does not include facilities which receive and manage only recyclable components of solid wastes that are removed at least annually.

"Public water supply well" means a water supply well, which is regulated by the Safe Drinking Water Act of 1974, the Mississippi Drinking Water Law of 1976, or regulations promulgated thereunder.

"Putrescible wastes" means solid wastes which are capable of being decomposed by micro-organisms with sufficient rapidity to cause nuisances from odors or gases.

"Qualified groundwater scientist" means a scientist, geologist or engineer, who has received a baccalaureate or post-graduate degree in the natural sciences, geology or engineering and has sufficient training and experience in groundwater hydrology and related fields as may be demonstrated by State registration, professional Certifications, or completion of accredited university programs that enable that individual to make sound professional judgements regarding groundwater monitoring, contaminant fate and transport, and corrective-action.

"Recyclables" means materials which are intended to be sold or delivered to the open market for recycling or processing into a marketable product.

"Regulated hazardous waste" means a solid waste that is a hazardous waste, as defined in 40 CFR Part 261.3, that is not excluded from regulation as a hazardous waste under 40 CFR Part 261.4(b) or was not generated by a conditionally exempt small quantity generator as defined in 40 CFR Part 261.5.

"Residuals" means material removed from a processing or composting facility which cannot be processed or composted.

"Rubbish" means nonputrescible solid wastes (excluding ashes) consisting of both combustible and noncombustible wastes. Combustible rubbish includes paper, rags, cartons, wood, furniture, rubber, plastics, yard trimmings, leaves and similar material. Noncombustible rubbish includes glass, crockery, metal cans, metal furniture and like material which will not burn at ordinary incinerator temperatures (not less than 1600 degrees F.).

"Rubbish site" means a site, which receives rubbish for the purpose of disposal.

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

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

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

"Scavenging" means the uncontrolled and unauthorized removal of materials at any point in the solid waste management system.

"Seismic impact zone" means an area with a ten percent or greater probability that the maximum horizontal acceleration in lithified earth material, expressed as a fraction of the earth's gravitational pull (g), will exceed 0.10g in 250 years.

"7Q10 flow" means the average streamflow rate over seven (7) consecutive days that may be expected to be reached as an annual minimum no more frequently than one (1) year in ten (10).

"Sewage Sludge" means the solid, semi-solid or liquid residue generated during treatment of municipal wastewater in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works.

"Single family dwelling unit" means either (a) a conventional single family detached dwelling or mobile home, or (b) a unit within a multi-family residential complex (townhouses, condominiums, or apartments).

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

"Solid waste" means any garbage, or refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved materials in domestic sewage, or solid or dissolved materials in irrigation return

flows or industrial discharges that are point sources subject to permit under 33 U.S.C. 1342, or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).

"Solid waste management facility" means any facility which manages nonhazardous solid waste, including landfills, rubbish sites, land application sites, processing facilities, composting facilities, transfer stations, and waste incinerators, but excluding ordinary storage vessels such as trash cans, dumpsters, etc.

"Storage" means the containment of wastes, either on a temporary basis or for a period of years, in such a manner as not to constitute disposal of such wastes.

"Stream or river" means a flowing body of water with a 7Q10 flow greater than zero.

"Structural components" means liners, leachate collection systems, final covers, run-on/run-off systems, and any other component used in the construction and operation of the MSWLF that is necessary for protection of human health and the environment.

"Thermophilic stage" means the biological stage in the composting process characterized by active bacteria which favor a high temperature range of 45° to 75°C (113° to 167°F). It occurs early in the composting process before the mesophilic stage and is associated with a high rate of decomposition.

"Transport" means the movement of wastes from the point of generation to any intermediate points, and finally to the point of ultimate storage or disposal.

"Transfer station" means a fixed facility used for the primary purpose of transferring solid waste from one solid waste transportation vehicle to another. Dumpsters or other comparable solid waste containers loaded and unloaded onto a transportation vehicle are not included in this definition.

"Unstable area" means a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity of some or all of the landfill structural components responsible for preventing releases from a landfill. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and Karst terrains.

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

"Vermicomposting" means a composting process that utilizes worms in the biological decomposition of waste.

"Washout" means the carrying away of solid waste by waters of the base flood.

"Waste management unit boundary" means a vertical surface located at the hydraulically downgradient limit of the unit. This vertical surface extends down into the uppermost aquifer.

"Wetlands" means those areas that are defined in 40 CFR 232.2. Wetlands include, but are not limited to, swamps, marshes, bogs, and similar areas.

"Yard Waste" means the leaves, grass cuttings, weeds, garden waste, tree limbs, and other vegetative wastes generated at residential,

commercial, institutional, governmental, or industrial properties.

D. Effective Date

The effective date of these regulations is October 1, 1993, except where Part 258 of Title 40 of the Code of Federal Regulations allows for a later date for MSWLF units and except where amendments to these regulations are effective at a later date. The effective date of the amendments adopted by the Commission on February 22, 1996, is April 3, 1996. The effective date of the amendments adopted by the Commission on April 28, 2005 is June 17, 2005.

E. Severability

If any provision, section, subsection, sentence, clause or phrase of any of these regulations, or the application of same to any person or set of circumstances is for any reason challenged or held to be invalid or void, the validity of the remaining regulations and/or portions thereof or their application to other persons or sets of circumstances shall not be affected thereby.

SECTION II. PERMIT PROCEDURES

- A. No solid waste management facility shall be operated without an individual permit from the Permit Board or a certificate of coverage under a general permit.
- B. The Permit Board may issue a general permit for a specified category or group of facilities that involve similar wastes or have similar operating requirements and restrictions.
- C. No new solid waste management facility nor any lateral expansion of an existing facility beyond the area previously approved shall be granted either an individual permit from the Permit Board or a certificate of coverage under a general permit, unless such facility is consistent with the approved local solid waste management plan for the area in which the facility is located. Solid waste management facilities existing prior to the date of Commission approval of the applicable local plan are considered to be consistent with such local plans, even if there is no recognition of such facilities in the plan. However, any lateral expansion of such existing facilities which has not been approved by the Permit Board prior to the date of Commission approval of the plan must be expressly recognized in the plan in order to be considered consistent with the plan.
- D. An application for issuance, re-issuance or transfer of an individual permit or a certificate of coverage under a general permit shall be made on forms provided by the Department. In addition to the information required in the application form, the Department may require other information as necessary to evaluate the proposed facility.
- E. Applicant Disclosure Statement Requirements
 - 1. Applicants for the issuance, re-issuance or transfer of an individual permit shall also file with the Permit Board or the Permit Board's designee a disclosure statement in accordance with Section 17-17-501 through 17-17-507, Mississippi Code Annotated, and the regulations promulgated pursuant thereto.
 - 2. Applicants for the issuance, re-issuance or transfer of a certificate of coverage under a general permit shall also file with the Permit Board or the Permit Board's designee a disclosure statement in accordance with Section 17-17-501 through 507, Mississippi Code Annotated, and the regulations promulgated pursuant thereto.
 - 3. For the purposes of Paragraphs E.1 and E.2 of this section, the term "applicants" means any persons, except public agencies, applying for a permit or a certificate of coverage to operate and/or construct a commercial nonhazardous solid waste management facility.
 - 4. If the owner (except a public agency) of a commercial nonhazardous solid waste management facility contracts with any person other than a public agency to operate the facility, the owner shall not allow the contractor to begin operation until disclosure statements with regard to the owner and the contractor have been submitted to and approved by the Permit Board or the Permit Board's designee in accordance with Section 17-17-501, Mississippi Code Annotated and the regulations promulgated pursuant thereto. If a public agency applies for a permit and proposes to operate a facility by contract, the contractor shall be required to file a disclosure statement.
- F. Notwithstanding the authority and the requirements of Section 17-17-501 through 17-17-507, Mississippi Code Annotated, the Permit Board or the Permit Board's designee may require a reasonable amount of information

concerning the financial capability and/or the performance history of an applicant and may use the information in determining whether an individual permit or a certificate of coverage under a general permit should or should not be granted.

- G. An application for the issuance, re-issuance, modification or transfer of any solid waste management permit or certificate of coverage and all reports required by the solid waste management permit or other information requested by the Permit Board shall be signed as follows:
1. For a corporation: a president, vice-president, secretary, or treasurer of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation;
 2. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;
 3. For a municipality, county, state, federal, or other public agency; either a principal executive officer or ranking elected official;
 4. The signature of a Duly Authorized Representative (DAR) shall be a valid signature under these Regulations, in lieu of the signatures described above provided the following conditions are met:
 - a. The DAR is an employee of the entity seeking the solid waste management permit or certificate of coverage.
 - b. The DAR is identified to the Department by the ranking officer of the corporation, partnership, proprietorship, municipality, county, state, federal or other public agency.
 - c. The DAR is responsible for the overall management of the solid waste facility.
- H. When the Department is satisfied that an application for an individual permit is complete, or that a proposed general permit has been completed it shall develop a proposed recommendation as follows:
1. If the proposed recommendation is to issue the individual or general permit, the Department shall, at a minimum, prepare a public notice and allow the general public a period of at least 30 days to provide comment regarding the application or to request a public hearing in accordance with Section 49-17-29(4)(a), Mississippi Code Annotated 1972. A public notice may be waived by the Department for modifications to existing facilities which do not involve an expansion of the facility or a significant change in the method of waste management. The Department may conduct a public hearing for proposals when a significant level of public interest exists in the project area or where warranted by other factors.
 2. If the proposal applies to the issuance of a general permit or an individual permit for an MSWLF unit, or the modification pertaining to the expansion of an MSWLF unit beyond the permitted capacity or area of an individual permit or a general permit, or the transfer of an individual permit for an MSWLF unit, a public hearing shall be conducted.
 3. The Permit Board may conduct a single public hearing on related groups of draft individual or general permits.
 4. Following a public notice and any public hearing which may be conducted, the Permit Board or the Permit Board's designee shall make a decision regarding the issuance of the permit.
- I. When the Department determines that an application for coverage under a

general permit is complete, the Permit Board or the Permit Board's designee shall make a decision regarding the issuance of the Certificate of Coverage.

- J. Any interested party aggrieved by any action of the Permit Board or the Permit Board's designee with regard to permit or certificate of coverage issuance, denial, modification or revocation may file a written request for a formal hearing in accordance with Section 49-17-29(4)(b), Mississippi Code Annotated.
- K. A permit shall not be issued for more than ten (10) years. Any existing permit which does not have an expiration date shall be re-evaluated and may be reissued for a period not to exceed ten (10) years after the date of reissuance. Such re-evaluation shall be limited to an evaluation of:
 - 1. The terms and conditions of the permit to determine consistency with current requirements of the Department,
 - 2. The operating history of the permittee at the permitted facility, and
 - 3. The permittee's ability to comply with Section III of these regulations (Siting Criteria).

Permits are subject to modification, revocation, and/or reissuance for good cause at any time during the life of the permit.

- L. A transfer of an individual permit or a certificate of coverage under a general permit from one person to another shall be made prior to any sale, conveyance, or assignment of the rights in the permit held by the permittee. Any change of more than 50 percent of the equity ownership of the facility or permittee over a sustained period resulting in a new majority owner shall constitute a transfer. A new majority owner for purposes of this provision shall be an individual, partnership, company, or group of affiliated companies. A transfer, as described in this paragraph, must be approved by the Permit Board. All transfers approved by the Permit Board shall be made contingent upon the final sale, conveyance, or assignment of rights in the permit being completed within one year of Permit Board action, and shall be effective on the date of final sale, conveyance, or assignment of rights in the permit.
- M. It is the responsibility of the permittee to possess or acquire a sufficient interest in or right to the use of the property for which a permit or certificate of coverage is issued, including the access route. The granting of a permit or a certificate of coverage does not convey any property rights or interest in either real or personal property; nor does it authorize any injury to private property, invasion of personal rights, or impairment of previous contract rights; nor any infringement of federal, state, or local laws or regulations outside the scope of the authority under which a permit or certificate of coverage is issued.
- N. Storage, processing, disposal or other placement of waste shall be limited to the area described in the application form required in paragraph D. of this section, unless an amended application is submitted to the Department and approved.
- O. When a disaster occurs, such as a tornado, hurricane, or flood, and results in urgent need for public solid waste disposal or processing facilities, the Department may approve a site or facility for immediate operation subject to stipulated conditions and for a limited period of time.

SECTION III. SITING CRITERIA

A. Applicability

1. Except as specifically excluded, the requirements of this section shall apply to all solid waste management facilities including landfills, rubbish sites, processing facilities, land application sites, composting facilities, waste incinerators, and transfer stations, as specified in this regulation.
2. The requirements of paragraphs B, L, and X do not apply to:
 - a. composting facilities which receive less than 5 tons per day of only natural vegetation, such as yard waste, tree limbs, etc.
 - b. rubbish sites, processing facilities, and transfer stations, any of which receive only Class II rubbish materials (as described in Section VI.C. of these regulations).
3. The requirements of paragraphs P through U and paragraphs W through Y of this section do not apply to solid waste management facilities which dispose only of industrial solid waste, where such facilities are located on the same industrial property on which the wastes are generated, unless the Permit Board, or where appropriate, the Permit Board's designee determines that such criteria should be applicable (such as property line setbacks).
4. The distances specified in this section shall be measured from the edge of the active disposal, processing, composting, transfer or storage area.
5. Any structure or area described in paragraph I, J, P, R, S, U and X of this section (e.g., a park, dwelling, etc.) shall not be considered applicable in the siting of a new solid waste management facility if the structure or area was designated by the applicable governmental body or was established after the site disclosure date. The site disclosure date shall be the date upon which an application for a permit or other authorization is submitted to the Department, unless the applicant chooses to notify the Department and the public at an earlier date, in which case the site disclosure date shall be the completion of such notification as follows:
 - a. the submittal of a notice to the Department containing the following information:
 - (1) the name, address, telephone number, and contact person of the applicant;
 - (2) a description of the type of proposed operation (i.e., landfill, land application site, etc.);
 - (3) an exact location and approximate size of the proposed facility; and
 - (4) where the applicant is a public agency, such as a county, municipality, or a regional authority, a copy of a duly adopted resolution stating the desire of the applicant to pursue a permit or other authorization for the operation of a solid waste management facility at the site described in paragraph A.5.a.(3) of this section; and

- b. public notification of the information listed in paragraph A.5.a. of this section shall consist of a prominent notice in at least one daily or weekly newspaper of general circulation within the area of the proposed facility. The notice shall be no less than four inches by seven inches in size and shall not be placed in that portion where legal notices and classified advertisements appear.
 - c. if notification is accomplished as described in paragraph A.5.a. and A.5.b. of this section, an application for a permit or other authorization must be submitted no later than one year after completion of notification for this exclusion to apply.
6. For new facilities that are adjacent to and part of an existing facility, the Permit Board, or where appropriate, the Permit Board's designee may, on a site specific basis, designate a smaller setback distance to any structure or area described in paragraphs I., J., P., R., S., U. and X. of this section (e.g., a park, dwelling, etc.) if the following are met:
- a. before April 1, 1991, the applicant obtained ownership or control of the property upon which the new facility is proposed, through an option to purchase or similar instruments vesting rights in the real property;
 - b. the applicant has demonstrated that a smaller setback distance would not present an unreasonable risk to the environment and to the health, safety, and welfare of the public; and
 - c. the facility is consistent with the approved local solid waste management plan.

The provisions of this paragraph shall be applicable only in cases where paragraph A.5. of this section does not apply.

B. Airport Safety

- 1. Owners of existing landfills and lateral expansions, outdoor processing facilities, and outdoor composting facilities which (1) accept waste on or after the effective date of these regulations, (2) accept waste likely to attract birds, and (3) are located within 10,000 feet of any airport runway end used by turbojet aircraft or within 5,000 feet of any airport runway end used only by piston-type aircraft, must demonstrate to the Department that the facility is designed and operated so that it does not pose a bird hazard to aircraft.
- 2. No new landfill, new outdoor processing facility, or new outdoor composting facility, which will accept waste likely to attract birds, shall be located within 10,000 feet of any airport runway end unless the state aeronautical agency states that the airport does not routinely serve turbojet aircraft.
- 3. No new landfill, new outdoor processing facility, or new outdoor composting facility, or lateral expansion of any such existing facilities, which will accept waste likely to attract birds, shall be located less than 5,000 feet from an airport runway end.
- 4. The restrictions described in paragraph B.2. and B.3. of this section are not applicable if the owner can demonstrate in writing the following:
 - a. the facility will be designed and operated so that it does

not pose a bird hazard to aircraft, and

- b. the airport is not being routinely utilized for scheduled commercial passenger services.
5. Any person proposing to locate a new MSWLF or implement a lateral expansion within a five-mile radius of any airport runway end used by turbojet or piston-type aircraft must notify the affected airport and the Federal Aviation Administration (FAA).
6. Any person proposing to locate a new MSWLF within 6 miles of a public airport as described in 49 U.S.C. § 44718(d) as amended in Section 503 of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century, Pub. L. No. 106-181 (April 5, 2000) "Structures interfering with air commerce" must demonstrate compliance with the site limitations of said Act.
7. The specific requirements of this section are not applicable to airports such as agricultural runways or other airstrips not open to the public. However, the Permit Board may establish a buffer zone between any such airstrip and a new landfill as deemed necessary.

C. Floodplains

Owners of new solid waste management facilities and lateral expansions, and owners of existing landfills and land application sites that accept waste on or after the effective date of these regulations, which are located within the 100-year floodplain, must demonstrate to the Department in writing that the facility will not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health or the environment.

D. Wetlands

1. New solid waste management facilities and lateral expansions, shall not be located in wetlands, unless the applicant obtains approval as required by federal law from the U.S. Army Corps of Engineers or from the U.S. Department of Agriculture, Natural Resource Conservation Commission, where agricultural lands are involved.
2. New solid waste management facilities and lateral expansions shall not be located in coastal wetlands unless the applicant obtains approval as required by state law from the Bureau of Marine Resources of the Mississippi Department of Wildlife, Fisheries, and Parks.
3. The owner must demonstrate compliance with paragraph D.1 and D.2 of this section by placing a copy of the permit in the operating record and must notify the Department in writing that it has been placed in the operating record.

E. Fault Areas

MSWLF units and lateral expansions of any existing MSWLF units shall not be located within 200 feet (60 meters) of a fault that has had displacement in Holocene time unless the applicant demonstrates to the Department that an alternative setback distance of less than 200 feet (60 meters) will not result in damage to the structural integrity of the landfill and will be protective of human health and the environment.

F. Seismic Impact Zones

MSWLF units and lateral expansions of any existing MSWLF units shall not be located in seismic impact zones, unless the applicant demonstrates to the Department that all containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.

G. Unstable Areas

Owners of new MSWLF units, existing MSWLF units, lateral expansions of existing MSWLF units and new rubbish sites, which are located in an unstable area, must demonstrate to the Department that engineering measures have been incorporated into the landfill or rubbish site design to ensure that the integrity of the structural components of the facility will not be disrupted. The owner must consider the following factors, at a minimum, when determining whether an area is unstable:

1. on-site or local soil conditions that may result in significant differential settling;
2. on-site or local geologic or geomorphologic features; and
3. on-site or local human-made features or events (both surface and subsurface).

H. Hydrocarbon Wells and Water Wells

No new landfill, new rubbish site, new land application site, or lateral expansion of any such existing facilities, shall be located such that an active or inactive hydrocarbon well or an active or inactive water well would be present beneath the actual disposal area, unless the applicant demonstrates, to the satisfaction of the Department, that the well has been adequately plugged.

I. Public Water Supplies

1. No new landfill or new land application site shall be located within 0.5 mile of a public water supply intake structure in a surface water body. If the runoff from the facility would enter the water body upgradient of the intake structure, this distance shall be increased to at least ten (10) miles. The Permit Board, or where appropriate, the Permit Board's designee may establish a greater distance based upon the nature of the surface water supply.
2. No new landfill or new land application site shall be located within 1000 feet of any existing public water supply well. This distance shall be increased to 0.5 mile if the proposed facility is hydraulically upgradient of any existing public water supply well.
3. Any new landfill or land application site proposed for location within a designated local wellhead protection area must comply with any duly adopted ordinances or regulations established pursuant to an approved Wellhead Protection Program.

J. Surface Water

1. No new landfill or new land application site shall be located within 0.5 mile of the banks of any section of a river, stream, lake or reservoir, or coastal water classified by the Commission as recreational or shellfish harvesting.
2. No new landfill, new land application site, new outdoor processing facility, or new outdoor composting facility shall be located

within 250 feet of the banks of any river, stream, lake or reservoir, or coastal water.

3. No new outdoor solid waste management facility shall be located within 100 feet of the banks of any river, stream, lake or reservoir, or coastal water.

K. Surface Water Drainage Areas

No new solid waste management facility shall be located in an area which may result in recurring washout of waste, such as in a surface water drainage channel.

L. Natural Geology

1. New landfills shall be located where there are adequate naturally occurring geological materials present of low permeability to act as a buffer between the base of the landfill liner and the top of the uppermost aquifer. Such materials shall generally consist of clays, silty clays, clayey silts, or other soils which have an average hydraulic conductivity of 1×10^{-6} cm/sec or less. The thickness, or depth, of these materials shall extend to at least five feet immediately beneath the base of the landfill liner.
2. Existing landfills which accepted waste on or after the effective date shall be located in an area as described in paragraph L.1. of this section unless:
 - (a) all unused disposal areas of the landfill as of the effective date of these regulations which will receive waste on or after that date, are constructed with a liner according to state requirements; and
 - (b) the naturally occurring geological materials present below the disposal area generally consist of clays, silty clays, clayey silts, or other soils which are of low permeability.
3. New rubbish sites, new composting facilities subject to Section IX.D or E of these regulations, any such existing rubbish sites and composting facilities receiving waste on or after April 9, 1994, shall be located in a site in which the top of the uppermost aquifer is at least five feet below the base of the liner. The liner shall consist of either of the following:
 - a. adequate naturally occurring geological materials present immediately below the disposal or composting area and on all sidewalls. Such materials shall generally consist of clays, silty clays, clayey silts, or other soils, which are of low permeability. The thickness, or depth, of these materials should extend to at least five feet below the disposal or composting area, and for sites having sidewalls, at least three feet laterally; or
 - b. a constructed or alternate liner, as approved by the Department.

M. Air Quality

No new solid waste incinerator shall be sited in an area which conflicts with state law and/or regulations.

N. Endangered or Threatened Species

No new solid waste management facility shall be located within an area which may affect:

1. a federally listed endangered or threatened species, unless in compliance with all statutes, rules, and regulations within the jurisdiction of the U.S. Fish and Wildlife Service, or
2. a state listed endangered or threatened species, unless in compliance with all statutes, rules, and regulations within the jurisdiction of the Mississippi Department of Wildlife, Fisheries, and Parks.

O. Historical and Archaeological Areas

No new solid waste management facility shall be located in such a manner as to significantly and adversely impact the cultural resources listed in, or eligible for listing in, the National Register of Historic Places, unless such impact to those cultural resources may be appropriately mitigated.

P. Parks and Recreational Areas

1. No new landfill, new rubbish site, new outdoor processing facility, new outdoor composting facility, new land application site receiving putrescible waste or new commercial waste incinerator shall be located within 0.5 mile of any of the following areas, without the specific written consent of the person responsible for managing such area:
 - a. a national, state, county, or city designated park; or
 - b. an outdoor recreational area, such as a golf course or swimming pool, owned by a city, county, or other public agency.
2. A greater setback distance may be established by the Permit Board, or where appropriate, the Permit Board's designee on a site specific basis.

Q. Forests, Wilderness Areas, Wildlife Management Areas, and Natural Areas

1. No new landfill, new rubbish site, new outdoor processing facility, new outdoor composting facility, new land application site receiving putrescible waste, or new commercial waste incinerator shall be located within any of the following areas, without the specific written consent of the person responsible for managing such area:
 - a. national forest land, national wilderness area, and national wildlife refuge areas, as designated by the appropriate federal agency; or
 - b. state wildlife management areas, state game management areas, and state natural areas, as designated by the Mississippi Department of Wildlife, Fisheries and Parks.
2. A setback distance may be established by the Permit Board, or where appropriate, the Permit Board's designee on a site specific basis.

R. Structures

No new landfill, new land application site receiving putrescible waste, new outdoor processing facility, or new outdoor composting facility receiving putrescible waste shall be located within 0.5 mile of any licensed school, licensed day-care center, licensed hospital, or licensed nursing home, or within 1000 feet of any church. The Permit Board, or where appropriate, the Permit Board's designee may allow a

smaller setback distance if a written agreement is obtained from the owner or appropriate representative stating that a smaller setback is acceptable.

S. Residential Areas

1. No new landfill or new land application site receiving putrescible waste shall be located within one mile of a residential area, unless the proposed facility would be located in an established industrial park, in which case the facility shall not be located less than 1000 feet from any residential area.
2. For purposes of this section, "residential area" means:
 - a. a group of 20 or more single family dwelling units on contiguous property and having an average density of two or more units per acre; or
 - b. a group of 40 or more single family dwelling units on contiguous property and having an average density of one or more units per acre; or
 - c. a subdivision containing at least 20 constructed houses, in which the subdivision plat is recorded in the chancery clerk's office of the appropriate county.

T. Property Line Setbacks (Buffer Zones)

1. All new solid waste management facilities shall be designed to comply with setback distances between the edge of the actual disposal, processing, composting, transfer or storage area and the property line as follows:
 - a. For transfer and processing facilities, except such outdoor facilities, the setback shall be at least 50 feet.
 - b. For outdoor transfer stations, outdoor processing facilities, composting facilities, and land application sites, the setback shall be at least 200 feet, except where adequate on-site screening, whether natural or artificial, will restrict the offsite view of the facility, in which case the setback shall be no less than 100 feet.
 - c. For rubbish sites the setback shall be at least 200 feet, except where adequate on-site screening, whether natural or artificial, will restrict the offsite view of the facility, in which case the setback shall be no less than 150 feet.
 - d. For landfills, the setback shall be at least 500 feet, except where adequate on-site screening, whether natural or artificial, will restrict the offsite view of the landfill, in which case the setback shall be no less than 250 feet.
2. The Permit Board, or where appropriate, the Permit Board's designee will consider requests for a smaller property setback distance upon the applicant's submittal of sufficient proof that affected property owners within the subject buffer zone have had timely and sufficient notice of the proposed facility. Any comments received as a result of such notice shall be considered prior to action upon any request for a decrease in the buffer zone requirements of paragraph T.1 of this section.
3. Existing facilities shall comply with the property setback distances that were approved at the time the site was permitted or authorized.

U. Aesthetics and Visibility

New landfills and new rubbish sites shall be located such that the actual disposal area is at least 1000 feet from the edge of the right-of-way of any interstate or primary highway, as designated by the Mississippi State Highway Commission, except the following:

1. those which will be screened by natural objects, planting, fences, or other appropriate means so as not to be visible from the main-traveled highway system, or otherwise removed from sight;
2. those which are located within areas which are zoned for industrial use under authority of law;
3. those which will be located within unzoned industrial areas, as determined by the Mississippi State Highway Department; or
4. those which will not be visible from the main-traveled highway system.

V. Local Government Regulations/Solid Waste Management Plans

New solid waste management facilities shall be located such that, on the date an application is submitted to the Department, the site does not conflict with regulations or ordinances of local governments, and is consistent with the state approved local or regional nonhazardous solid waste management plan.

W. Transportation Factors

Owners of new commercial landfills must demonstrate to the Permit Board that the anticipated additional traffic along the primary route to the facility will not significantly increase the safety risk within a five (5) mile radius of the disposal area of the facility. At a minimum, the demonstration shall address the following factors:

1. the primary route(s) that the applicant expects will be used for the transportation of waste to the facility within a five (5) mile radius of the disposal area;
2. an estimate of the number and types of vehicles routinely traveling on the primary route(s) within said five (5) mile radius;
3. an estimate of the number and types of vehicles expected by the applicant to transport waste to the facility via the primary route(s) within said five (5) mile radius;
4. an estimate of the loaded weight of each type of vehicle expected to transport waste to the facility via the primary route(s) within the five (5) mile radius; and
5. proximity to waste generators.

The Permit Board may require such reasonable restrictions and limitation as it deems appropriate regarding the primary transportation route(s) to the facility if it determines that the primary route(s) of transportation to the facility by waste hauling vehicles would significantly increase the safety risks within the five (5) mile radius.

X. Noise Factors

To attenuate for noise, no new landfill or new outdoor processing facility shall be located closer than 1500 feet of a single family

dwelling unit, and no new rubbish site, new indoor processing facility, or lateral expansions of any such facilities shall be located closer than 500 feet of a single family dwelling unit unless:

1. the owner of such dwelling provides written consent to a smaller distance; or
2. the applicant can demonstrate that the facility will be located, configured, designed, constructed, and operated such that the noise level at the neighboring dwelling, caused by the normal waste management operations of the facility, but not by vehicular movement into or out of the facility, will not exceed an eight-hour time weighted average (TWA) of 65 decibels between the hours of 7 a.m. and 7 p.m., and an eight-hour TWA of 55 decibels between 7 p.m. and 7 a.m.

The Department may require a greater distance, or may require noise abatement measures, if it determines that the noise level at a neighboring dwelling, caused by the normal waste management operations of the facility, but not by vehicular movement into or out of the facility, will exceed an eight-hour TWA of 65 decibels between the hours of 7 a.m. and 7 p.m., or an eight-hour TWA of 55 decibels between 7 p.m. and 7 a.m.

Y. Existing Facility Demonstrations

1. By the effective date of these regulations, owners of existing MSWLF units, which accept waste after that date, must demonstrate to the satisfaction of the Department, compliance with or non-applicability of the requirements of paragraphs B., C., G. and L. of this section. The Department may establish a closure schedule for facilities failing to satisfy this demonstration. In no event shall facilities which fail to satisfy this demonstration remain in operation after October 9, 1996.
2. By April 9, 1994, owners of all existing land application sites, rubbish sites, processing facilities, composting facilities, and existing landfills other than MSWLF units which accept waste on or after that date, must demonstrate to the satisfaction of the Department, compliance or non-applicability with the requirements of paragraphs B, C, and L of this section. The Department may establish a closure schedule for facilities failing to meet this demonstration.

Z. Recordkeeping

Documentation of compliance or non-applicability of the requirements of this section shall be retained by the owner at the facility or at another approved site until otherwise directed by the Department, but in no case shall records be required to be retained longer than 5 years after the completion of any applicable closure and post-closure requirements. Such documentation shall be made available to the Department upon request.

SECTION IV. LANDFILL REQUIREMENTS

A. Applicability

1. The requirements of this section do not apply to MSWLF units that stopped receiving solid waste before October 9, 1991, or to other landfills that stopped receiving solid waste before the effective date of these regulations.
2. MSWLF units that received waste after October 9, 1991 but stopped receiving waste before the effective date of these regulations are exempt from all the requirements of this section, except for the closure requirements specified in paragraph E.2 of this section. The owner must complete closure requirements within six months of last receipt of wastes. Owners of MSWLF units that fail to complete closure requirements, as required in this paragraph, will be subject to all the requirements of this section.
3. Notwithstanding paragraphs A.1 and A.2 of this section, the Commission or Permit Board may impose additional requirements on any landfill on a case-by-case basis in order to prevent, abate, control or correct groundwater contamination, public endangerment or as otherwise determined necessary to protect human health, welfare or the environment.
4. All landfills that received waste on or after the effective date of these regulations, must comply with the requirements of this section, unless otherwise specified.

B. Operating Requirements

1. Procedures for Excluding the Receipt of Hazardous Waste and other Unauthorized Wastes
 - a. Owners of all MSWLF units must implement a program at the facility for detecting and preventing the disposal of the following wastes:
 - (1) hazardous waste as defined by and subject to the Mississippi Hazardous Waste Management Regulations and Subtitle C of the Federal Resource Conservation and Recovery Act;
 - (2) polychlorinated biphenyls (PCB) waste;
 - (3) liquid wastes as described in Paragraph B.9 of this section;
 - (4) regulated Asbestos Containing Materials (ACM) which have not been properly bagged or contained in such a manner as to prevent the wastes from becoming airborne; and
 - (5) whole waste tires which have not been shredded, chopped, cut or otherwise processed as described in Section D.2 of the Mississippi Waste Tire Management Regulations.
 - b. At a minimum, the program required in paragraph B.1.a of this section, must include the following procedures:
 - (1) The owner must obtain information on any industrial process waste stream, prior to disposal, including the following:

- (a) generator's name and address
 - (b) transporter's name and address
 - (c) name of the waste
 - (d) process generating the waste
 - (e) physical and chemical properties of the waste
 - (f) quantity of waste
 - (g) certification from the generator that the waste is not a regulated hazardous waste under Subtitle C of the Resource Conservation and Recovery Act and the Mississippi Hazardous Waste Management Regulations.
- (2) The owner shall forward the information required above to the Department and shall not accept the industrial process waste if the Department objects to the disposal of such waste at this facility. If the Department does not object to the disposal of such waste within 14 days of receipt of the information required above, the permittee may assume that the Department has no objections. The Department may require the submission of additional information in order to further describe or characterize the waste.
- (3) For purposes of this section, the term "industrial process waste" shall mean any solid waste generated as a result of the manufacture of a product, except uncontaminated packaging materials and containers, uncontaminated machinery components, tires, land clearing or landscaping wastes, office wastes, cafeteria wastes, and construction and demolition wastes.
- (4) The owner shall conduct random inspections of incoming loads unless the owner takes other steps to ensure that incoming loads do not contain regulated hazardous wastes or PCB wastes.
- (5) The owner shall maintain records of any inspections.
- (6) The owner shall insure that all facility personnel are properly trained to recognize regulated hazardous waste and PCB wastes.
- (7) The owner shall notify the Department if a regulated hazardous waste or PCB waste is discovered at the facility.

2. Cover Material Requirements

- a. Except as provided in paragraph B.2.c. of this section, the owners of all MSWLF units, except ash monofills, must cover disposed solid waste with at least six inches of earthen material at the end of each operating day, or at more frequent intervals if determined to be necessary by the Department to control disease vectors, fires, odors, blowing litter, and scavenging.
- b. Except as provided in paragraph B.2.c. of this section, the owners of all MSWLF units which receive only ash and owners of all landfills other than MSWLF units must cover disposed solid waste with at least six inches of earthen material at a frequency determined by the Department.

c. Alternate Cover Materials

- (1) Alternative materials of an alternative thickness (other than at least six inches of earthen material) may be approved by the Department, if the owner demonstrates that the alternative material, thickness and/or method of application adequately control disease vectors, fires, odors, blowing litter, and scavenging without presenting a threat to human health and the environment.
- (2) The use of alternate cover materials shall generally require the weekly application of a soil cover, unless otherwise determined by the Department.

3. Disease Vector Control

Populations of disease vectors shall be minimized through proper compaction and covering procedures. Approved pesticides, or use of other techniques appropriate for the protection of human health and the environment, shall be employed for vector control when necessary.

4. Explosive Gases Control

a. Owners of all MSWLF units must ensure that:

- (1) the concentration of methane gas generated by the facility does not exceed 25 percent of the lower explosive limit for methane in facility structures (excluding gas control or recovery system components); and
- (2) the concentration of methane gas does not exceed the lower explosive limit for methane at the facility property boundary.

b. Owners of all MSWLF units must implement a routine methane monitoring program to ensure that the standards of paragraph B.4.a. of this section are met. A plan describing the methane monitoring program should be submitted to the Department for approval. The plan should provide for the following:

- (1) The type and frequency of monitoring must be determined based on the following factors:
 - (a) soil conditions;
 - (b) the hydrogeologic conditions surrounding the facility;
 - (c) the hydraulic conditions surrounding the facility; and
 - (d) the location of facility structures and property boundaries.
- (2) The minimum frequency of monitoring shall be quarterly.
- (3) Results of all methane monitoring pursuant to paragraph B.4.b. of this section shall be submitted to the Department no later than sixty (60) days following each monitoring period.

- c. If methane gas levels exceeding the limits specified in paragraph B.4.a. of this section are detected, the owner must:
 - (1) immediately take all necessary steps to ensure protection of human health and notify the Department;
 - (2) within seven days of detection, submit to the Department and place in the operating record the methane gas levels detected and a description of the steps taken to protect human health; and
 - (3) within 60 days of detection, implement a remediation plan for the methane gas releases. A copy of the plan shall be submitted to the Department for approval and upon approval shall be placed in the operating record. The plan shall describe the nature and extent of the problem and the proposed remedy.
- d. The Department may establish alternative schedules for demonstrating compliance with paragraphs B.4.c.(2) and B.4.c.(3) of this section.

5. Air Criteria

- a. Owners of all landfills must ensure that they do not violate any applicable requirements developed under a State Implementation Plan (SIP) approved or promulgated by the Administrator pursuant to Section 110 of the Clean Air Act, as amended.
- b. Open burning of solid waste, except for land clearing debris generated on the site of the facility, shall be prohibited. Open burning of land clearing debris shall be conducted in accordance with Section 3.7.b of the "Air Emission Regulations for the Prevention, Abatement, and Control of Air Contaminants." An adequate supply of water under pressure at the site or an adequate stockpile of earth reasonably close to the disposal area shall be provided, or there shall be a nearby, organized Fire Department providing service when called. The Department may approve alternate methods of fire protection or waive this requirement when there is no need for fire protection. Should an accidental fire occur, the operator shall immediately take action to extinguish the fire and shall notify the Department by the close of the Department's next business day.

6. Waste Placement

- a. Disposal activity shall be restricted to the area defined in the approved application.
- b. For landfills subject to the construction quality assurance (CQA) requirements of Section IV.B.19:

Prior to construction or preparation of any new disposal cell or area at a landfill, the cell boundaries shall be appropriately located and marked by a land surveyor licensed by the State of Mississippi to ensure construction within the approved area.

- c. For Landfills not subject to the CQA requirements of Section IV.B.19:

Prior to construction or preparation of any new disposal cell or area, disposal area boundaries shall be located and clearly marked by a land surveyor licensed by the State of Mississippi. Permanent markers shall be erected at the corners of the approved disposal area. The markers shall be a minimum, 3-foot high concrete posts, metal pipes, weather resistant wood posts or other suitable markers approved by the Department. The markers shall be placed in the ground to a sufficient depth to facilitate permanence and shall be maintained by the owner. Markers that become damaged shall be promptly re-established by the owner with the assistance of a licensed land surveyor, where necessary.

7. Access Requirements

Unloading of solid waste shall be confined to as small an area as practical. Adequate security, including use of artificial barriers, natural barriers, or both, as appropriate to protect human health and the environment and to control access into the facility and to prevent the disposal of unauthorized materials, unauthorized vehicular traffic and illegal dumping of wastes, shall be provided. An attendant shall be on duty during operating hours and during special site utilization to direct unloading of solid waste.

8. Run-On/Run-Off Control Systems

- a. Owners of all landfills must design, construct, and maintain:

- (1) a run-on control system to prevent flow onto the active portion of the landfill during the peak discharge from a 25-year storm;
- (2) a run-off control system from the active portion of the landfill to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

- b. Run-off from the active portion of the landfill unit must be handled in accordance with paragraph B.8 of this section.

9. Surface Water Requirements

- a. Landfills shall not:

- (1) cause a discharge of pollutants into waters of the State, including wetlands, that violates any requirements of the Clean Water Act or the Mississippi Air and Water Pollution Control Act, including but not limited to the National Pollutant Discharge Elimination System (NPDES) requirements.
- (2) cause the discharge of a non-point source of pollution to waters of the State, including wetlands, that violates any requirement of an area-wide or state-wide water quality management plan that has been approved under Section 208 or 319 of the Clean Water Act, as amended.

- b. Monitoring of surface waters may be required in some

instances. Where monitoring of surface waters is required, the frequency of sampling, the parameters to be analyzed, and the reporting requirements shall be established in the permit.

10. Liquids Restrictions

- a. Bulk or non-containerized liquid waste may not be placed in landfills unless:
 - (1) the waste is household waste other than septic waste; or
 - (2) the waste is leachate or gas condensate derived from the landfill. Prior to placing such liquids in the landfill the owner must demonstrate and obtain approval from the Department that the landfill, whether it is a new or existing landfill or lateral expansion, is designed with a composite liner and leachate collection system as described in paragraph C.1.b. of this section. The owner must place the demonstration in the operating record and notify the Department that it has been placed in the operating record.
- b. Containers holding liquid waste may not be placed in a landfill unless:
 - (1) the container is a small container similar in size to that normally found in household waste;
 - (2) the container is designed to hold liquids for use other than storage; or
 - (3) the waste is household waste.

11. Recordkeeping Requirements

- a. The owner of a landfill must keep an accurate written daily record of deliveries of solid waste to the facility including but not limited to: the name of the hauler, the source of the waste, the types of waste received and the weight of solid waste measured in tons received at the facility. For those facilities that do not have access to weight scales, the weight should be converted to tons from cubic yards using conversion factors developed or approved by the Department.
- b. The owner of a landfill must record and retain near the facility in an operating record or in an alternative location approved by the Department the following information as it becomes available:
 - (1) any location restriction demonstration required under Section III of these regulations;
 - (2) inspection records, training procedures, notification procedures, and any other information necessary to demonstrate compliance with paragraph B.1. of this section;
 - (3) any gas monitoring results from monitoring and any remediation plans required by paragraph B.4 of this section;

- (4) any landfill design documentation for placement of leachate or gas condensate in the landfill as required under paragraph B.9.a.(2) of this section;
 - (5) any demonstration, certification, finding, monitoring, testing, or analytical data required by paragraph D of this section;
 - (6) closure and post-closure care plans and any monitoring, testing, or analytical data as required by paragraph E of this section; and
 - (7) any cost estimates and financial assurance documentation required by paragraph F of this section.
- c. The owner must notify the Department when the documents from paragraph B.10.b of this section have been placed or added to the operating record and shall make such documents available at all reasonable times for inspection by the Department. Additionally, upon request by the Department, a copy of any information contained in the operating record must be furnished to the Department.
 - d. The Department may set alternative schedules for recordkeeping and notification requirements as specified in paragraphs B.10.b and B.10.c of this section, except for the notification requirements in Section III B.5 of this regulation and paragraph D.5.g.(1)(c) of this section.

12. Buffer Requirements to Utility Easements

Unless otherwise required by special circumstances, owners of all landfills must maintain a minimum distance of 25 feet between the disposal operation and pipeline, underground utility or electrical transmission line easements. The buffer should provide enough distance to ensure the safety of the operating personnel and facilities to be protected and should also provide space for drainage controls.

13. Windblown Materials

A portable fence or other suitable means of containment shall be employed, if necessary, to confine windblown materials from unloading, spreading and compaction operations to the smallest area practical. It shall be the responsibility of the site operator to collect and return to the active disposal area all windblown materials at least every operating day or as necessary to minimize unhealthy, unsafe or unsightly conditions.

14. All Weather Access

All-weather roads shall be provided within the site to any designated unloading area. Provisions shall be made to provide proper cover during wet weather.

15. Annual Report

The owner of a solid waste landfill shall submit an annual report to the Department each year on or before February 28th, to include information describing the operations from the preceding calendar year. At a minimum, the report shall contain the following:

- a. aggregate information on the types, amounts and sources of waste received during the calendar year. Listed types

should be divided minimally into residential and non-residential wastes. The amounts of waste received should be reported in units of tons, with the amount of waste originating in-state and out-of-state listed separately. The sources of waste should list cities and/or counties individually, with a clear indication of wastes originating from out-of-state.

- b. a contour drawing of the landfill showing areas filled during the report year and total cumulative areas filled.
- c. the estimated remaining capacity, in terms of volume and years of life remaining.
- d. if the owner or contract operator is a private concern, an updated disclosure statement. If all information from the previously submitted disclosure statement is unchanged, a letter stating such may be included in lieu of an updated disclosure statement.
- e. an adjusted closure and post-closure cost estimate, if applicable.
- f. an audit of the financial assurance document and the end-of-year value of the financial assurance mechanism, if applicable.
- g. a modified financial assurance document, if necessary.

16. Contract Operator - Disclosure Requirements

If the owner of a commercial solid waste landfill contracts with any person other than a public agency to operate the facility, the owner shall not allow the contractor to begin operation until a disclosure statement has been submitted to and approved by the Permit Board or the Permit Board's designee in accordance with Section 17-17-501, Mississippi Code Annotated, and the regulations promulgated pursuant thereto.

17 Equipment

Owners of a landfill must insure that adequate numbers and types of operating equipment are provided at all times to properly manage the landfill operation. Replacement equipment shall be promptly brought to the site, as necessary, in the event of equipment breakdown.

18 Excavation of Waste

No excavation of solid waste shall be conducted without approval of the Department.

19 Liner Quality Assurance

At least two weeks prior to disposal of solid waste in any new MSWLF unit or lateral expansion of existing MSWLF unit, or other landfill where deemed necessary by the Permit Board, a construction quality assurance report shall be submitted to the Department. The report shall contain a certification from an independent registered professional engineer that the area has been constructed according to the approved design plans.

20. Operator Certification

- a. Each commercial solid waste landfill must be operated by a

person who holds a current certificate of competency issued by the Commission in accordance with paragraph G. of this section. Such person must have direct supervision over and be personally responsible for the daily operation and maintenance of the landfill.

- b. In the event of temporary loss of a certified operator due to illness, death, discharge, or other legitimate cause, written notice shall be given to the Department within 7 days. The continued operation of such system without a certified operator may proceed on an interim basis for a period not to exceed 180 days, except for good cause shown upon petition to the Commission.

C. Design Criteria

1. New landfills and lateral expansions of existing, MSWLF units shall be constructed in accordance with one of the following designs:
 - a. with a composite liner as defined by these regulations and a leachate collection system that is designed and constructed to maintain less than a 30-cm depth (11.81 inches) of leachate over the liner, excluding sumps and collection trenches; or
 - b. with a design approved by the Department. For new MSWLF units and lateral expansions of existing MSWLF units, the design must ensure that the concentration values listed in Table 1 of 40 CFR Part 258 (Subpart D) will not be exceeded in the uppermost aquifer at the relevant point of compliance, as specified by the Department under paragraph C.3 of this section.
2. When approving a design that complies with paragraph C.1.b of this section, the Department shall consider at least the following factors:
 - a. the hydrogeologic characteristics of the facility and surrounding land;
 - b. the climatic factors of the area;
 - c. the volume and physical and chemical characteristics of the waste and the leachate; and
 - d. other relevant factors as determined by the Department.
3. The relevant point of compliance specified by the Department shall be no more than 150 meters from the waste management unit boundary and shall be located on land owned by the owner of the landfill. In determining the relevant point of compliance, the Department shall consider at least the following factors:
 - a. the hydrogeologic characteristics of the facility and surrounding land;
 - b. the volume and physical and chemical characteristics of the leachate;
 - c. the quantity, quality, and direction, of flow of groundwater;
 - d. the proximity and withdrawal rate of the groundwater users;
 - e. the availability of alternative drinking water supplies;

- f. the existing quality of the groundwater, including other sources of contamination and their cumulative impacts on the groundwater and whether groundwater is currently used or reasonably expected to be used for drinking water;
- g. public health, safety, and welfare effects;
- h. practicable capability of the owner; and
- i. other relevant factors as determined by the Department.

D. Groundwater Monitoring and Corrective Action Requirements

1. Schedule of Compliance

- a. Owners of landfills must comply with the groundwater monitoring requirements of this section before waste can be placed in the landfill.
- b. The Department may approve an alternative schedule for the owners of existing landfills and lateral expansions to comply with the groundwater monitoring requirements specified in this section. In setting the compliance schedule, the Department must consider potential risks posed by the unit to human health and the environment. The following factors should be considered in determining potential risk:
 - (1) proximity of human and environmental receptors;
 - (2) design of the landfill;
 - (3) age of the landfill;
 - (4) the size of the landfill;
 - (5) types and quantities of wastes disposed including sewage sludge; and
 - (6) resource value of the underlying aquifer, including:
 - (a) current and future uses;
 - (b) proximity and withdrawal rate of users; and
 - (c) groundwater quality and quantity.
- c. Once established at a landfill, groundwater monitoring shall be conducted throughout the active life and post-closure care period of that landfill as specified in paragraph E. of this section.
- d. The Department may establish alternative schedules for demonstrating compliance with:
 - (1) paragraph D.2.d.(2) of this section, pertaining to notification of placement of certification in operating record;
 - (2) paragraph D.4.d.(1) of this section, pertaining to notification that statistically significant increase (SSI) notice is in operating record;
 - (3) paragraphs D.4.d.(2) and D.4.d.(3) of this section, pertaining to an assessment monitoring program;

- (4) paragraph D.5.b of this section, pertaining to sampling and analyzing Appendix II constituents;
 - (5) paragraph D.5.d.(1) of this section, pertaining to placement of notice (Appendix II constituents detected) in record and notification of notice in record;
 - (6) paragraph D.5.d.(2) of this section, pertaining to sampling for Appendix I and II;
 - (7) paragraph D.5.g. of this section, pertaining to notification (and placement of notice in record) of SSI above groundwater protection standard;
 - (8) paragraphs D.5.g.(1)(d) and D.6.a of this section, pertaining to assessment of corrective measures;
 - (9) paragraph D.7.a of this section, pertaining to selection of remedy and notification of placement in record;
 - (10) paragraph D.8.c.(4) of this section, pertaining to notification of placement in record (alternative corrective action measures); and
 - (11) paragraph D.8.f of this section, pertaining to notification of placement in record (certification of remedy completed).
- e. Groundwater monitoring requirements under paragraphs D.2 through D.5 of this section may be suspended by the Department, if the owner can demonstrate that there is no potential for migration of hazardous constituents from the landfill to the uppermost aquifer during the active life of the landfill and the post-closure care period. This demonstration must be certified by a qualified groundwater scientist and approved by the Department, and must be based upon:
- a. site-specific field collected measurements, sampling, and analysis of physical, chemical, and biological processes affecting contaminant fate and transport; and
 - b. contaminant fate and transport predictions that maximize contaminant migration and consider impacts on human health and environment.

For landfills other than MSWLF units the Department may approve an alternative demonstration process.

2. Groundwater Monitoring Systems

- a. A groundwater monitoring system must be installed that consists 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 background groundwater that has not been affected by leakage from a unit. A determination of background quality may include sampling of wells that are not hydraulically upgradient of the waste management area where:
 - (a) hydrogeologic conditions do not allow the owner or operator to determine what wells are

hydraulically upgradient; or

(b) sampling at other wells will provide an indication of background groundwater quality that is as representative or more representative than that provided by the upgradient wells.

(2) Represent the quality of groundwater passing the relevant point of compliance specified by the Department under paragraph C.3 of this section. The downgradient monitoring system must be installed at the relevant point of compliance specified by the Department under paragraph C.3. of this section that ensures detection of groundwater contamination in the uppermost aquifer. When physical obstacles preclude installation of groundwater monitoring wells at the relevant point of compliance at existing units, the down-gradient monitoring system may be installed at the closest practicable distance hydraulically down-gradient from the relevant point of compliance specified by the Department, under paragraph C.3 of this section that ensure detection of groundwater contamination in the uppermost aquifer.

b. The Department may approve a multi-unit groundwater monitoring system instead of separate groundwater monitoring systems for each landfill unit when the facility has several units, provided the multi-unit groundwater monitoring system meets the requirement of paragraph D.2.a of this section and will be as protective of human health and the environment as individual monitoring systems for each landfill unit, based on the following factors:

- (1) number, spacing, and orientation of the landfill units;
- (2) hydrogeologic setting;
- (3) site history;
- (4) engineering design of the landfill units; and
- (5) type of waste accepted at the landfill units.

c. 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 groundwater.

- (1) The owner must notify the Department that the design, installation, development, and decommission of any monitoring wells, piezometers and other measurement, sampling, and analytical devices documentation has been placed in the operating record; and
- (2) The monitoring wells, piezometers, and other measurement, sampling, and analytical devices must be operated and maintained so that they perform to design specifications throughout the life of the monitoring program.

- d. The number, spacing, and depths of monitoring systems shall be:
 - (1) Determined based upon site-specific technical information that must include thorough characterization of:
 - (a) aquifer thickness, groundwater flow rate, groundwater flow direction including seasonal and temporal fluctuations in groundwater flow; and
 - (b) saturated and unsaturated geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer, and materials comprising the confining unit defining the lower boundary of the uppermost aquifer; including, but not limited to: thicknesses, stratigraphy, lithology, hydraulic conductivities, porosities and effective porosities.
 - (2) Certified by a qualified groundwater scientist and approved by the Department. Within 14 days of this certification, the owner must notify the Department that the certification has been placed in the operating record.

3. Groundwater Sampling and Analysis Requirements

- a. The groundwater monitoring program must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of groundwater quality at the background and downgradient wells installed in compliance with paragraph D.2.a. of this section. The owner must notify the Department that the sampling and analysis program documentation has been placed in the operating record and the program must include procedures and techniques for:
 - (1) sample collection;
 - (2) sample preservation and shipment;
 - (3) analytical procedures;
 - (4) chain of custody control; and
 - (5) quality assurance and quality control.
- b. The groundwater monitoring program must include sampling and analytical methods that are appropriate for groundwater sampling and that accurately measure hazardous constituents and other monitoring parameters in groundwater samples. Groundwater samples shall not be field-filtered prior to laboratory analysis.
- c. The sampling procedures and frequency must be protective of human health and the environment.
- d. Groundwater elevations must be measured in each well immediately prior to purging, each time groundwater is sampled. The owner must determine the rate and direction of groundwater flow each time groundwater is sampled.

Groundwater elevations in wells which monitor the same waste management area must be measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction.

- e. The owner must establish background groundwater quality in a hydraulically upgradient or background well(s) for each of the monitoring parameters or constituents required in the particular groundwater monitoring program that applies to the landfill, as determined under paragraph D.4.a., or paragraph D.5.a. of this section. Background groundwater quality may be established at wells that are not located hydraulically upgradient from the landfill if it meets the requirements of paragraph D.2.a.(1) of this section.
- f. The number of samples collected to establish groundwater quality data must be consistent with the appropriate statistical procedures determined pursuant to paragraph D.3.g. of this section. The sampling procedures shall be those specified under paragraph D.4.b. of this section for detection monitoring, paragraphs D.5.b. and D.5.d. of this section for assessment monitoring, and paragraph D.6.b. of this section for corrective action.
- g. The owner must specify in the operating record one of the following statistical methods to be used in evaluating groundwater monitoring data for each hazardous constituent. The statistical test chosen shall be conducted separately for each hazardous constituent in each well.
 - (1) A parametric analysis of variance (ANOVA) followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's mean and the background mean levels for each constituent.
 - (2) An analysis of variance (ANOVA) based on ranks followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's median and the background median levels for each constituent.
 - (3) A tolerance or prediction interval procedure in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit.
 - (4) A control chart approach that gives control limits for each constituent.
 - (5) Another statistical test method that meets the performance standards of paragraph D.3.h of this section. The owner must place a justification for this alternative in the operating record and obtain approval from the Department for the use of this alternative test. The justification must demonstrate that the alternative method meets the performance standards of paragraph D.3.h of this section.
- h. Any statistical method chosen under paragraph D.3.g of this

section shall comply with the following performance standards, as appropriate:

- (1) The statistical method used to evaluate groundwater monitoring data shall be appropriate for the distribution of chemical parameters or hazardous constituents. If the distribution of the chemical parameters or hazardous constituents is shown by the owner to be inappropriate for a normal theory test, then the data should be transformed or a distribution-free theory test should be used. If the distributions for the constituents differ, more than one statistical method may be needed.
- (2) If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentrations or a groundwater protection standard, the test shall be done at a Type I error level no less than 0.01 for each testing period. If a multiple comparisons procedure is used, the Type I experiment wise error rate for each testing period shall be no less than 0.05; however, the Type I error of no less than 0.01 for individual well comparisons must be maintained. This performance standard does not apply to tolerance intervals, prediction intervals, or control charts.
- (3) If a control chart approach is used to evaluate groundwater monitoring data, the specific type of control chart and its associated parameter values shall be protective of human health and the environment. The parameters shall be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.
- (4) If a tolerance interval or a predictional interval is used to evaluate groundwater monitoring data, the levels of confidence and, for tolerance intervals, the percentage of the population that the interval must contain, shall be protective of human health and the environment. These parameters shall be determined after considering the number of samples in the background database, the data distribution, and the range of the concentration values for each constituent of concern.
- (5) The statistical method shall account for data below the limit of detection with one or more statistical procedures that are protective of human health and the environment. Any practical quantitation limit (pql) that is used in the statistical method shall be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility.
- (6) If necessary, the statistical method shall include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.

i. The owner must determine whether or not there is a

statistically significant increase over background values for each parameter or constituent required in the particular groundwater monitoring program that applies to the landfill, as determined under paragraphs D.4.a or D.5.a of this section.

- (1) In determining whether a statistically significant increase has occurred, the owner must compare the groundwater quality of each parameter or constituent at each monitoring well designated pursuant to paragraph D.2.a.(2) of this section to the background value of that constituent, according to the statistical procedures and performance standards specified under paragraphs D.3.g and D.3.h of this section.
- (2) Within a reasonable period of time after completing sampling and analysis, the owner must determine whether there has been a statistically significant increase over background at each monitoring well.

4. Detection Monitoring Program

- a. Detection monitoring is required at all groundwater monitoring wells defined under paragraphs D.2.a.(1) and D.2.a.(2) of this section. At a minimum, a detection monitoring program must include the monitoring for the constituents listed in Appendix I of 40 CFR Part 258.
 - (1) The Department may delete any of the Appendix I monitoring parameters for a landfill if it can be shown that the removed constituents are not reasonably expected to be contained in or derived from the waste contained in the landfill.
 - (2) The Department may establish an alternative list of inorganic indicator parameters for a landfill, in lieu of some or all of the heavy metals (constituents 1-15 in Appendix I of 40 CFR Part 258, if the alternative parameters provide a reliable indication of inorganic releases from the landfill to the groundwater. In determining alternative parameters, the Department shall consider the following factors:
 - (a) the types, quantities, and concentrations of constituents in waste managed at the landfill;
 - (b) the mobility, stability, and persistence of waste constituents or their reaction products in the unsaturated zone beneath the landfill;
 - (c) the detectability of indicator parameters, waste constituents, and reaction products in the groundwater; and
 - (d) the concentration or values and coefficients of variation of monitoring parameters or constituents in the groundwater background.
- b. The monitoring frequency for all constituents listed in Appendix I of 40 CFR Part 258, or in the alternative list approved in accordance with paragraph D.4.a.(2) of this section, shall be at least semiannual during the active life of the facility (including closure) and the post-closure period. A minimum of four independent samples from

each well (background and downgradient) must be collected and analyzed for the Appendix I constituents, or the alternative list approved in accordance with paragraph D.4.a.(2) of this section, during the first semiannual sampling event. At least one sample from each well (background and downgradient) must be collected and analyzed during subsequent semiannual sampling events.

The Department may specify an appropriate alternative frequency for repeated sampling and analysis for Appendix I constituents, or the alternative list approved in accordance with paragraph D.4.a.(2) of this section, during the active life (including closure) and the post-closure care period. The alternative frequency during the active life (including closure) shall be no less than annual. The alternative frequency shall be based on consideration of the following factors:

- (1) lithology of the aquifer and unsaturated zone;
 - (2) hydraulic conductivity of the aquifer and unsaturated zone;
 - (3) groundwater flow rates;
 - (4) minimum distance between upgradient edge of the landfill and downgradient monitoring well screen (minimum distance of travel); and
 - (5) resource value of the aquifer.
- c. Results of all detection monitoring pursuant to paragraph D.4.a of this section shall be submitted to the Department no later than sixty (60) days following each monitoring period.
- d. If the owner determines, pursuant to paragraph D.3.g of this section, that there is a statistically significant increase (SSI) over background for one or more of the constituents listed in Appendix I of 40 CFR Part 258, or in the alternative list approved in accordance with paragraph D.4.a.(2) of this section, at any monitoring well at the boundary specified under paragraph D.2.a.(2) of this section, the owner:
- (1) must, within 14 days of this finding, place a notice in the operating record indicating which constituents have shown statistically significant changes from background levels, and notify the Department that this notice was placed in the operating record; and
 - (2) must establish an assessment monitoring program meeting the requirements of paragraph D.5. of this section within 90 days except as provided for in paragraph D.4.d.(3) of this section.
 - (3) the owner may demonstrate that a source other than the landfill caused the contamination or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. A report documenting this demonstration must be certified by a qualified groundwater scientist and approved by the Department and shall be placed in the operating record. If a successful demonstration is

made and documented, the owner may continue detection monitoring as specified in this section. If, after 90 days, a successful demonstration is not made, the owner must initiate an assessment monitoring program as required in paragraph D.5. of this section.

5. Assessment Monitoring Program

- a. Assessment monitoring is required whenever a statistically significant increase (SSI) over background has been detected for one or more of the constituents listed in Appendix I of 40 CFR Part 258 or in the alternative list approved in accordance with paragraph D.4.a.(2) of this section.
- b. Within 90 days of triggering an assessment monitoring program, and annually thereafter, the owner must sample and analyze the groundwater for all constituents identified in Appendix II of 40 CFR Part 258. A minimum of one sample from each downgradient well must be collected and analyzed during each sampling event. For any constituent detected in the downgradient wells as the result of the complete Appendix II analysis, a minimum of four independent samples from each well (background and downgradient) must be collected and analyzed to establish background for the new constituents.

The Department may specify an appropriate subset of wells to be sampled and analyzed for Appendix II constituents during assessment monitoring. The Department may delete any of the Appendix II monitoring parameters if it can be shown that the removed constituents are not reasonably expected to be in or derived from the waste contained in the unit.

Results of all assessment monitoring pursuant to this paragraph shall be submitted to the Department no later than sixty (60) days following each monitoring period.

- c. The Department may specify an appropriate alternate frequency for repeated sampling and analysis for the full set of Appendix II constituents required by paragraph D.5.b. of this section, during the active life (including closure) and post-closure care of the unit considering the following factors:
 - (1) lithology of the aquifer and unsaturated zone;
 - (2) hydraulic conductivity of the aquifer and unsaturated zone;
 - (3) groundwater flow rates;
 - (4) minimum distance between upgradient edge of the landfill and downgradient monitoring well screen (minimum distance of travel);
 - (5) resource value of the aquifer; and
 - (6) nature (fate and transport) of any constituents detected in response to this section.
- d. After obtaining the results from the initial or subsequent sampling events required in paragraph D.5.b of this section, the owner must:

- (1) within 14 days, place a notice in the operating record identifying the Appendix II constituents that have been detected and notify the Department that this notice has been placed in the operating record;
- (2) within 90 days, and on at least a semiannual basis thereafter, resample all wells specified by paragraph D.2.a. of this section, conduct analyses for all constituents in Appendix I of 40 CFR Part 258 or in the alternative list approved in accordance with paragraph D.4.a.(2) of this section, and for those constituents in Appendix II of 40 CFR Part 258 that are detected in response to paragraph D.5.b of this section, and record their concentrations in the facility operating record. At least one sample from each well (background and downgradient) must be collected and analyzed during these sampling events.

The Department may specify an alternative monitoring frequency during the active life (including closure) and the post closure period for the constituents referred to in this paragraph. The alternative frequency for Appendix I constituents, or the alternative list approved in accordance with paragraph D.4.a.(2) of this section, during the active life (including closure) shall be no less than annual. The alternative frequency shall be based on consideration of the factors specified in paragraph D.5.c. of this section;

- (3) establish background concentrations for any constituents detected pursuant to paragraphs D.5.b or D.5.d.(2) of this section; and
 - (4) establish groundwater protection standards for all constituents detected pursuant to paragraphs D.5.b. or D.5.d of this section. The groundwater protection standards shall be established in accordance with paragraphs D.5.h or D.5.i of this section.
- e. If the concentrations of all Appendix II constituents are shown to be at or below background values, using the statistical procedures in paragraph D.3.g of this section, for two consecutive sampling events, the owner must notify the Department of this finding and may return to detection monitoring.
 - f. If the concentrations of any Appendix II constituents are above background values, but all concentrations are below the groundwater protection standard established under paragraphs D.5.h or D.5.i of this section, using the statistical procedures in paragraph D.3.g of this section, the owner must continue assessment monitoring in accordance with this section.
 - g. If one or more Appendix II constituents are detected at statistically significant levels above the groundwater protection standard established under paragraphs D.5.h or D.5.i of this section in any sampling event, the owner must, within 14 days of this finding, place a notice in the operating record identifying the Appendix II constituents that have exceeded the groundwater protection standard and notify the Department and all appropriate local government officials that the notice has been placed in the operating

record.

- (1) The owner also:
 - (a) must characterize the nature and extent of the release by installing additional monitoring wells as necessary;
 - (b) must install at least one additional monitoring well at the facility boundary in the direction of contaminant migration and sample this well in accordance with paragraph D.5.d.(2) of this section;
 - (c) must notify all persons who own the land or reside on the land that directly overlies any part of the plume of contamination if contaminants have migrated off-site if indicated by sampling of wells in accordance with paragraph D.5.g.(1) of this section; and
 - (d) must initiate an assessment of corrective measures as required by paragraph D.6 of this section within 90 days; or
 - (2) The owner may demonstrate that a source other than the landfill caused the contamination, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. A report documenting this demonstration must be certified by a qualified groundwater scientist and approved by the Department and placed in the operating record. If a successful demonstration is made the owner must continue monitoring in accordance with the assessment monitoring program pursuant to this section, and may return to detection monitoring if the Appendix II constituents are at or below background as specified in paragraph D.5.e of this section. Until a successful demonstration is made, the owner must comply with paragraph D.5.g of this section including initiating an assessment of corrective measures.
- h. The owner must establish a groundwater protection standard for each Appendix II constituent detected in the groundwater. The groundwater protection standard shall be:
- (1) for constituents for which a maximum contaminant level (MCL) has been promulgated under Section 1412 of the Safe Drinking Water Act (codified) under 40 CFR Part 141, the MCL for that constituent;
 - (2) for constituents for which MCLs have not been promulgated, the background concentration for the constituent established from wells in accordance with paragraph D.2.a.(1) of this section; or
 - (3) for constituents for which the background level is higher than the MCL identified under paragraph D.5.h.(1) of this section or health based levels identified under paragraph D.5.i.(1) of this section, the background concentration.
- i. The Department may establish an alternative groundwater protection standard for constituents for which MCLs have

not been established. These groundwater protection standards shall be appropriate health based levels that satisfy the following criteria:

- (1) the level is derived in a manner consistent with the United States Environmental Protection Agency guidelines for assessing the health risks of environmental pollutants (51 FR 33992, 34006, 34014, 34028, September 24, 1986);
 - (2) the level is based on scientifically valid studies conducted in accordance with the Toxic Substances Control Act Good Laboratory Practice Standards (40 CFR part 792) or equivalent;
 - (3) for carcinogens, the level represents a concentration associated with an excess lifetime cancer risk level (due to a continuous lifetime exposure) within the 1×10^{-4} to 1×10^{-6} range;
 - (4) for systemic toxicants, the level represents a concentration to which the human population (including sensitive subgroups) could be exposed to on a daily basis that is likely to be without appreciable risk of deleterious effects during a lifetime. For purposes of these regulations, systemic toxicants include toxic chemicals that cause effects other than cancer or mutation; and
 - (5) the level is not less stringent than any applicable State groundwater standards.
- j. In establishing groundwater protection standards under paragraph D.5.i of this section, the Department may consider the following:
- (1) multiple contaminants in the groundwater;
 - (2) exposure threats to sensitive environmental receptors; and
 - (3) other site-specific exposure or potential exposure to groundwater.

6. Assessment of Corrective Measures

- a. Within 90 days of finding that any of the constituents listed in Appendix II of 40 CFR Part 258 have been detected at a statistically significant level exceeding the groundwater protection standards defined under paragraph D.5.h or D.5.i of this section, the owner must initiate an assessment of corrective measures. Such an assessment must be completed within a reasonable period of time.
- b. The owner must continue to monitor in accordance with the assessment monitoring program as specified in paragraph D.5. of this section.
- c. The assessment shall include an analysis of the effectiveness of potential corrective measures in meeting all of the requirements and objectives of the remedy as described under paragraph D.7. of this section, addressing at least the following:
 - (1) the performance, reliability, ease of implementation,

and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination;

- (2) the time required to begin and complete the remedy;
 - (3) the costs of remedy implementation; and
 - (4) the institutional requirements such as State or local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy(s).
- d. The owner must discuss the results of the corrective measures assessment, prior to the selection of remedy, in a public meeting with interested and affected parties.

7. Selection of Remedy

- a. Based on the results of the corrective measures assessment conducted under paragraph D.6 of this section, the owner must select a remedy that, at a minimum, meets the standards listed in paragraph D.7.b of this section. The owner must notify the Department, within 14 days of selecting a remedy, that a report describing the selected remedy has been placed in the operating record and how it meets the standards in paragraph D.7.b of this section.
- b. Remedies must:
 - (1) be protective of human health and the environment;
 - (2) attain the groundwater protection standard as specified pursuant to paragraphs D.5.h or D.5.i of this section;
 - (3) control the source(s) of releases so as to reduce or eliminate, to the maximum extent practicable, further releases of Appendix II constituents into the environment that may pose a threat to human health or the environment; and
 - (4) comply with standards for management of wastes as specified in paragraph D.8.d of this section.
- c. In selecting a remedy that meets the standards of paragraph D.7.b of this section, the owner shall consider the following evaluation factors:
 - (1) the long- and short-term effectiveness and protectiveness of the potential remedy(s), along with the degree of certainty that the remedy will prove successful based on consideration of the following:
 - (a) magnitude of reduction of existing risks;
 - (b) magnitude of residual risks in terms of likelihood of further releases due to waste remaining following implementation of a remedy;
 - (c) the type and degree of long-term management required including monitoring, operation, and maintenance;

- (d) short-term risks that might be posed to the community, workers, or the environment during implementation of such a remedy, including potential threats to human health and the environment associated with excavation, transportation, and redisposal or containment;
 - (e) time until full protection is achieved;
 - (f) potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, redisposal, or containment;
 - (g) long-term reliability of the engineering and institutional controls; and
 - (h) potential need for replacement of the remedy.
- (2) the effectiveness of the remedy in controlling the source to reduce further releases based on consideration of the following factors:
- (a) the extent to which containment practices will reduce further releases; and
 - (b) the extent to which treatment technologies may be used.
- (3) the ease or difficulty of implementing a potential remedy(s) based on consideration of the following types of factors:
- (a) degree of difficulty associated with constructing the technology;
 - (b) expected operational reliability of the technologies;
 - (c) need to coordinate with and obtain necessary approvals and permits from other agencies;
 - (d) availability of necessary equipment and specialists; and
 - (e) available capacity and location of needed treatment, storage, and disposal services.
- (4) practicable capability of the owner, including a consideration of the technical and economic capability.
- (5) the degree to which community concerns are addressed by a potential remedy(s).
- d. The owner shall specify as part of the selected remedy a schedule(s) for initiating and completing remedial activities. Such a schedule must require the initiation of remedial activities within a reasonable period of time taking into consideration the factors set forth in paragraphs D.7.d.(1) through D.7.d.(8) of this section. The owner must consider the following factors in determining the schedule of remedial activities:

- (1) extent and nature of contamination;
 - (2) practical capabilities of remedial technologies in achieving compliance with groundwater protection standards established under paragraphs D.5.g or D.5.h of this section and other objectives of the remedy;
 - (3) availability of treatment or disposal capacity for wastes managed during implementation of the remedy;
 - (4) desirability of utilizing technologies that are not currently available, but which may offer significant advantages over already available technologies in terms of effectiveness, reliability, safety, or ability to achieve remedial objectives;
 - (5) potential risks to human health and the environment from exposure to contamination prior to completion of the remedy;
 - (6) resource value of the aquifer including:
 - (a) current and future uses;
 - (b) proximity and withdrawal rate of users;
 - (c) groundwater quantity and quality;
 - (d) the potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituent;
 - (e) the hydrogeologic characteristic of the facility and surrounding land;
 - (f) groundwater removal and treatment costs; and
 - (g) the cost and availability of alternative water supplies.
 - (7) practicable capability of the owner; and
 - (8) other relevant factors.
- e. The Department may determine that remediation of a release of an Appendix II constituent from a landfill is not necessary if the owner demonstrates to the Department that:
- (1) the groundwater is additionally contaminated by substances that have originated from a source other than a landfill and those substances are present in concentrations such that cleanup of the release from the landfill would provide no significant reduction in risk to actual or potential receptors; or
 - (2) the constituent(s) is present in groundwater that:
 - (a) is not currently or reasonably expected to be a source of drinking water; and
 - (b) is not hydraulically connected with waters to which the hazardous constituents are migrating or are likely to migrate in a concentration(s) that would exceed the groundwater protection

standards established under paragraph D.5.h or D.5.i of this section; or

(3) remediation of the release(s) is technically impracticable; or

(4) remediation results in unacceptable cross-media impacts.

f. A determination by the Department pursuant to paragraph D.7.e of this section shall not affect the authority of the State to require the owner to undertake source control measures or other measures that may be necessary to eliminate or minimize further releases to the groundwater, to prevent exposure to the groundwater, or to remediate the groundwater to concentrations that are technically practicable and significantly reduce threats to human health or the environment.

8. Implementation of the Corrective Action Program

a. Based on the schedule established under paragraph D.7.d of this section for initiation and completion of remedial activities the owner must:

(1) establish and implement a corrective action groundwater monitoring program that:

(a) at a minimum, meets the requirements of an assessment monitoring program under paragraph D.5 of this section;

(b) indicates the effectiveness of the corrective action remedy; and

(c) demonstrates compliance with groundwater protection standard pursuant to paragraph D.8.e of this section.

(2) implement the corrective action remedy selected under paragraph D.7 of this section; and

(3) take any interim measures necessary to ensure the protection of human health and the environment. Interim measures should, to the greatest extent practicable, be consistent with the objectives of and contribute to the performance of any remedy that may be required pursuant to paragraph D.7 of this section. The following factors must be considered by an owner in determining whether interim measures are necessary:

(a) time required to develop and implement a final remedy;

(b) actual or potential exposure of nearby populations or environmental receptors to hazardous constituents;

(c) actual or potential contamination of drinking water supplies or sensitive ecosystems;

(d) further degradation of the groundwater that may occur if remedial action is not initiated expeditiously;

- (e) weather conditions that may cause hazardous constituents to migrate or be released;
 - (f) risks of fire or explosion, or potential for exposure to hazardous constituents as a result of an accident or failure of a container or handling system; and
 - (g) other situations that may pose threats to human health and the environment.
- b. An owner may determine, based on information developed after implementation of the remedy has begun or other information, that compliance with requirements of paragraph D.7.b of this section are not being achieved through the remedy selected. In such cases, the owner must implement other methods or techniques that could practicably achieve compliance with the requirements, unless the owner makes the determination under paragraph D.8.c of this section.
- c. If the owner determines that compliance with requirements under paragraph D.7.b of this section cannot be practically achieved with any currently available methods, the owner must:
 - (1) obtain certification of a qualified groundwater scientist and approval by the Department that compliance with requirements under paragraph D.7.b of this section cannot be practically achieved with any currently available methods;
 - (2) implement alternate measures to control exposure of humans or the environment to residual contamination, as necessary to protect human health and the environment;
 - (3) implement alternate measures for control of the sources of contamination, or for removal or decontamination of equipment, units, devices, or structures that are:
 - (a) technically practicable; and
 - (b) consistent with the overall objective of the remedy.
 - (4) notify the Department within 14 days that a report justifying the alternative measures prior to implementing the alternative measures has been placed in the operating record.
- d. All solid wastes that are managed pursuant to a remedy required under paragraph D.7 of this section, or an interim measure required under paragraph D.8.a.(3) of this section, shall be managed in a manner:
 - (1) that is protective of human health and the environment; and
 - (2) that complies with applicable RCRA requirements.
- e. Remedies selected pursuant to paragraph D.7 of this section shall be considered complete when:

- (1) the owner complies with the groundwater protection standards established under paragraph D.5.h or D.5.i of this section at all points within the plume of contamination that lie beyond the groundwater monitoring well system established under paragraph D.2.a of this section.
 - (2) compliance with the groundwater protection standards established under paragraphs D.5.h or D.5.i of this section has been achieved by demonstrating that concentrations of Appendix II constituents have not exceeded the groundwater protection standard(s) for a period of three consecutive years using the statistical procedures and performance standards in paragraph D.3.g and D.3.h of this section. The Department may specify an alternative length of time during which the owner must demonstrate that concentrations of Appendix II constituents have not exceeded the groundwater protection standard(s) taking into consideration:
 - (a) Extent and concentration of the release(s);
 - (b) Behavior characteristics of the hazardous constituents in the groundwater;
 - (c) Accuracy of monitoring or modeling techniques, including any seasonal, meteorological, or other environmental variabilities that may affect the accuracy; and
 - (d) Characteristics of the groundwater.
 - (3) all actions required to complete the remedy have been satisfied.
- f. Upon completion of the remedy, the owner must notify the Department within 14 days that a certification that the remedy has been completed in compliance with the requirements of paragraph D.8.e of this section has been placed in the operating record. The certification must be signed by the owner and by a qualified groundwater scientist and approved by the Department.
- g. When, upon completion of the certification, the owner determines that the corrective action remedy has been completed in accordance with the requirements under paragraph D.8.e of this section, the owner shall be released from the requirements for financial assurance for corrective action under paragraph F of this section.

E. Closure and Post-Closure Care

1. Closure/Post-Closure Plan.

- a. Owners of MSWLF units must prepare a written closure/post-closure plan that describes the steps necessary to close all MSWLF units at any point during its active life in accordance with the requirements of paragraph E.2 of this section, to monitor and care for the facility during the post-closure period in accordance with the requirements of paragraph E.3 of this section, and to reclaim any on-site borrow areas used for obtaining daily or final cover. The plan, at a minimum, must include the following information:
 - (1) a description of the final cover, designed in accordance with paragraph E.2.a or E.2.b of this

section, and the methods and procedures to be used to install the cover;

- (2) an estimate of the largest area of the MSWLF unit ever requiring a final cover as required in paragraph E.2.a of this section at any time during the active life;
 - (3) an estimate of the maximum inventory of wastes ever on-site over the active life of the landfill facility;
 - (4) a schedule for completing all activities necessary to satisfy the closure requirements in paragraph E.2 of this section.
 - (5) a description of the monitoring and maintenance activities required in paragraph E.3 of this section for each MSWLF unit, and frequency at which these activities will be performed;
 - (6) name, address, and telephone number of the person or office to contact about the facility during the post-closure period; and
 - (7) a description of the planned use of the property during the post-closure period. Post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other components of the containment system, or the function of the monitoring systems unless necessary to comply with any other state or federal regulations. The Department may approve any other disturbance if the owner demonstrates that disturbance of the final cover, liner or other component of the containment system, including any removal of waste, will not increase the potential threat to human health or the environment.
- b. Owners of MSWLF units must notify the Department that a closure/post-closure plan has been prepared and placed in the operating record no later than the effective date of these regulations, or by the initial receipt of waste, whichever is later.
- c. Closure and post-closure activities at an MSWLF unit must be conducted in accordance with the closure/post-closure plan after approval of the plan is granted by the Department. Any proposed change to the plan must be submitted to the Department for approval. No changes to the plan may be made without approval by the Department. A copy of the approved plan must be kept at the landfill or another approved site until the owner has been released from the requirements for closure and post-closure care.

2. Closure Requirements.

- a. Owners of MSWLF units and all other landfills must install a final cover system that is designed to minimized infiltration and erosion. The final cover system must be comprised of an erosion layer underlain by an infiltration layer as follows:
- (1) The infiltration layer must be comprised of a minimum of 18 inches of earthen material that has a permeability less than or equal to the permeability

of any bottom liner system or natural subsoils present, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less, and

- (2) The erosion layer must consist of a minimum of 6 inches of earthen material that is capable of sustaining native plant growth.
- b. The Department may approve an alternative final cover design that includes:
- (1) an infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified in paragraph E.2.a.(1) of this section, and
 - (2) an erosion layer that provides equivalent protection from wind and water erosion as the erosion layer specified in paragraph E.2.a.(2) of this section.
- c. The final cover gradient on landfills that receive waste on or after the effective date of these regulations shall be a minimum of four percent (4%) and a maximum of twenty-five percent (25%), unless otherwise approved by the Department.
- d. The final cover gradient on MSWLF units that stop receiving waste before the effective date of these regulations shall not exceed twenty-five percent (25%), unless otherwise approved by the Department.
- e. A native grass seed or other shallow-rooted vegetation suitable to minimize soil erosion, as approved by the Department, must be planted and maintained over each closed unit. Trees may not be used in lieu of or in addition to the grass cover.
- f. Following closure of each MSWLF unit or other landfill, the owner must notify the Department that a certification, signed by an independent registered professional engineer, verifying that the final cover system has been completed in accordance with paragraphs E.2.a through E.2.e of this section, has been placed in the operating record. Such certification must be placed in the operating record within sixty (60) days after planting the grass seed in accordance with paragraph E.2.e of this section.
- g. (1) Within ninety (90) days after all landfill units are closed, the owner must record on the deed to the landfill facility property, or some other instrument that is normally examined during title search, a notation and survey plat, prepared by a registered land surveyor, indicating the location and dimensions of the actual filled area with respect to permanently surveyed benchmarks or Section corners, and notify the Department that the notation and survey plat have been recorded and a copy of each has been placed in the operating record.
- (2) The notation on the deed must in perpetuity notify any potential purchaser of the property of the following information:
- (i) the land has been used as a landfill facility;
 - (ii) the name of the landfill owner(s);

(iii) the year the landfill started and ended disposal operations; and

(iv) its use is restricted under paragraph E.1.a.(7) of this section.

- h. The owner of a landfill may request permission from the Department to remove the notation and survey plat from the deed if all wastes are removed from the facility.
- i. Prior to beginning closure of each MSWLF unit or other landfill as specified in paragraph E.2.j of this section, an owner must notify the Department that a notice of intent to close the unit or landfill has been placed in the operating record.
- j. The owner must begin closure activities of each MSWLF unit or other landfill no later than 30 days after the date on which the unit receives the known final receipt of wastes or, if the unit has remaining capacity and there is a reasonable likelihood that the unit will receive additional wastes, no later than one year after the most recent receipt of wastes. Extensions beyond the one-year deadline for beginning closure may be granted by the Department if the owner demonstrates that the unit has the capacity to receive additional wastes and the owner has taken and will continue to take all steps necessary to prevent threats to human health and the environment from the unclosed unit.
- k. The owner must complete closure activities of each MSWLF unit or other landfill within 180 days following the beginning of closure as specified in paragraph E.2.j of this section. Extensions of the closure period may be granted by the Department if the owner demonstrates that closure will, of necessity, take longer than 180 days and he has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed unit.

3. Post-Closure Requirements

- a. Following closure of each MSWLF unit or other landfill, the owner must conduct post-closure care. Post-closure care must be conducted for 30 years, except as provided under paragraph E.3.b of this section.
- b. The length of the post-closure care period may be:
 - (1) decreased by the Department if the owner demonstrates that the reduced period is sufficient to protect human health and the environment and this demonstration is approved by the Department; or
 - (2) increased by the Department if the Department determines that the lengthened period is necessary to protect human health and the environment.
- c. Post-closure care must consist of at least the following:
 - (1) maintaining the integrity and effectiveness of any final cover, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, preventing run-on and run-off from eroding or otherwise damaging the final cover, and preventing the growth of trees on

the landfill cover.

- (2) maintaining and operating any required leachate collection system in accordance with paragraph C of this section. The Department may allow the owner to stop managing leachate if the owner demonstrates that leachate no longer poses a threat to human health and the environment;
 - (3) monitoring the groundwater in accordance with paragraph D of this section and maintaining the groundwater monitoring system, if applicable;
 - (4) maintaining and operating any required gas monitoring system in accordance with paragraph B.4 of this section.
- d. Following completion of the post-closure care period for each MSWLF unit or other landfill, the owner must notify the Department that a certification, signed by an independent registered professional engineer, verifying that post-closure care has been completed in accordance with paragraph E.3 of this section, has been placed in the operating record. Such certification must be placed in the operating record within sixty (60) days after the completion of the post-closure care period.

F. Financial Assurance

Financial assurance requirements under paragraph F apply to owners of MSWLF units and other commercial landfills, except owners who are State or Federal government entities whose debts and liabilities are the debts and liabilities of the State of Mississippi or the United States. The requirements of this paragraph may be applicable to other landfills as determined necessary by the Permit Board.

1. Financial Assurance for Closure

- a. The owner must have a detailed written estimate, in current dollars, of the cost of hiring a third party to close the largest area ever requiring a final cover as required under paragraph E of this section, at any time during the active life. The owner must notify the Department that the estimate has been placed in the operating record.
- (1) The cost estimate must equal the cost of closing the largest area ever requiring a final cover at any time during the active life when the extent and manner of its operation would make closure the most expensive.
 - (2) During the active life of the landfill, the owner must annually adjust the closure cost estimate for inflation.
 - (3) The owner must increase the closure cost estimate and the amount of financial assurance provided under paragraph F.1.b of this section if changes to any applicable closure plan or landfill conditions increase the maximum cost of closure at any time during the remaining active life.
 - (4) Upon approval of the Department and notification in the operating record, the owner may reduce the closure cost estimate and the amount of financial assurance provided under paragraph F.1.b of this

section if the cost estimate exceeds the maximum cost of closure at any time during the remaining life of the landfill.

- b. The owner must establish financial assurance for closure in compliance with paragraph F.4 of this section. The owner must provide continuous coverage for closure until released from financial assurance requirements by demonstrating compliance with paragraph E.2 of this section.

2. Financial Assurance for Post-Closure Care

- a. The owner must have a detailed written estimate, in current dollars, of the cost of hiring a third party to conduct post-closure care for the landfill in compliance with paragraph E. of this section. The post-closure cost estimate used to demonstrate financial assurance in paragraph F.2.b of this section must account for the total costs of conducting post-closure care, including annual and periodic costs over the entire post-closure care period. The owner must notify the Department that the estimate has been placed in the operating record.

- (1) The cost estimate for post-closure care must be based on the most expensive costs of post-closure care during the post-closure care period.

- (2) During the active life of the landfill and during the post-closure care period, the owner must annually adjust the post-closure cost estimate for inflation.

- (3) The owner must increase the post-closure care cost estimate and the amount of financial assurance provided under paragraph F.2.b of this section if changes in any applicable post-closure plan or landfill conditions increase the maximum costs of post-closure care.

- (4) The owner may reduce the post-closure cost estimate and the amount of financial assurance provided under paragraph F.2.b of this section if the cost estimate exceeds the maximum costs of post-closure care remaining over the post-closure care period. The owner must notify the Department that the justification for the reduction of the post-closure cost estimate and the amount of financial assurance has been placed in the operating record.

- b. The owner must establish, in a manner in accordance with paragraph F.4 of this section, financial assurance for the costs of post-closure care as required under paragraph E.3.c of this section. The owner must provide continuous coverage for post-closure care until released from financial assurance requirements for post-closure care by demonstrating compliance with paragraph E.3.d of this section.

3. Financial Assurance for Corrective Action

- a. An owner required to undertake a corrective action program under paragraph D.8 of this section must have a detailed written estimate, in current dollars, of the cost of hiring a third party to perform the corrective action in accordance with the program required under paragraph D.8 of this section. The corrective action cost estimate must

account for the total costs of corrective action activities as described in the corrective action plan for the entire corrective action period. The owner must notify the Department that the estimate has been placed in the operating record.

- (1) The owner must annually adjust the estimate for inflation until the corrective action program is completed in accordance with paragraph D.8.f of this section.
 - (2) The owner must increase the corrective action cost estimate and the amount of financial assurance provided under paragraph F.2.b of this section if changes in the corrective action program or landfill conditions increase the maximum costs of corrective action.
 - (3) The owner may reduce the amount of the corrective action cost estimate and the amount of financial assurance provided under paragraph F.3.b of this section if the cost estimate exceeds the maximum remaining costs of corrective action. The owner must notify the Department that the justification for the reduction of the corrective action cost estimate and the amount of financial assurance has been placed in the operating record.
- b. The owner required to undertake a corrective action program under paragraph D.8 of this section must establish, in a manner in accordance with paragraph F.4 of this section, financial assurance for the most recent corrective action program. The owner must provide continuous coverage for corrective action until released from financial assurance requirements for corrective action by demonstrating compliance with paragraphs D.8.(f) and D.8.(g) of this section.

4. Criteria for Allowable Mechanisms

The mechanisms used to demonstrate financial assurance under this section must ensure that the funds necessary to meet the costs of closure, post-closure care, and corrective action for known releases will be available whenever they are needed. Owners must choose from the options specified in paragraphs F.4.a through F.4.i of this section.

- a. Trust Fund.
- (1) An owner may satisfy the requirements of this section by establishing a trust fund, which conforms to the requirements of this paragraph. 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 of Mississippi agency. A copy of the trust agreement must be placed in the facility's operating record.
 - (2) Payments into the trust fund must be made annually by the owner over the term of the initial permit or over the remaining life of the MSWLF unit or other landfill, whichever is shorter, in the case of a trust fund for closure or post-closure care, or over one-half of the estimated length of the corrective action program in the case of corrective action for

known releases. This period is referred to as the pay-in period.

- (3) For a trust fund used to demonstrate financial assurance for closure and post-closure care, the first payment into the fund must be at least equal to the current cost estimate for closure or post-closure care, divided by the number of years in the pay-in period as defined in paragraph F.4.a.(2) of this section. The amount of subsequent payments must be determined by the following formula:

$$\text{Next Payment} = \frac{\text{CE}-\text{CV}}{\text{Y}}$$

where CE is the current cost estimate for closure or post-closure care (updated for inflation or other changes), CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

- (4) For a trust fund used to demonstrate financial assurance for corrective action, the first payment into the trust fund must be at least equal to one-half of the current cost estimate for corrective action, divided by the number of years in the corrective action pay-in period as defined in paragraph F.4.a.(2) of this section. The amount of subsequent payments must be determined by the following formula:

$$\text{Next Payment} = \frac{\text{RB}-\text{CV}}{\text{Y}}$$

where RB is the most recent estimate of the required trust fund balance for corrective action (i.e., the total costs that will be incurred during the second half of the corrective action period), CV is the current value of the trust fund, and Y is the number of years remaining on the pay-in period.

- (5) The initial payment into the trust fund must be made before the initial receipt of waste or before April 9, 1994, whichever is later, in the case of closure and post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of paragraph D.8 of this section.
- (6) If the owner establishes a trust fund after having used one or more alternate mechanisms specified in this section, the initial payment into the trust fund must be at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to the specifications of paragraph F.4.a of this section, as applicable.
- (7) The owner or other person authorized to conduct closure, post-closure care, or corrective action activities may request reimbursement from the trustee for these expenditures. Requests for reimbursement will be granted by the trustee only if sufficient funds are remaining in the trust fund to cover the

remaining costs of closure, post-closure care, or corrective action, and if justification and documentation of the cost is placed in the operating record. The owner must notify the Department that the documentation of the justification for reimbursement has been placed in the operating record and that reimbursement has been received.

- (8) The trust fund may be terminated by the owner only if the owner substitutes alternate financial assurance as specified in this section or if he is no longer required to demonstrate financial responsibility in accordance with the requirements of paragraphs F.1.b, F.2.b, or F.3.b of this section.

b. Surety Bond Guaranteeing Payment or Performance.

- (1) An owner may demonstrate financial assurance for closure or post-closure care by obtaining a payment or performance surety bond which conforms to the requirements of this paragraph. An owner may demonstrate financial assurance for corrective action by obtaining a performance bond which conforms to the requirements of this paragraph. The bond must be effective before the initial receipt of waste in the case of closure and post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of paragraph D.8. of this section. The owner must notify the Department that a copy of the bond has been placed in the operating record. 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 penal sum of the bond must be in an amount at least equal to the current closure, post-closure care or corrective action cost estimate, whichever is applicable, except as provided in paragraph F.4.g of this section.
- (3) Under the terms of the bond, the surety will become liable on the bond obligation when the owner fails to perform as guaranteed by the bond.
- (4) The owner must establish a standby trust fund. The standby trust fund must meet the requirements of paragraph F.4.a of this section except the requirements for initial payment and subsequent annual payments specified in paragraphs F.4.(a)(2), F.4.(a)(3), F.4.(a)(4) and F.4.(a)(5) of this section.
- (5) Payments made under the terms of the bond will be deposited by the surety directly into the standby trust fund. Payments from the trust fund must be approved by the trustee.
- (6) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner and to the Department 120 days in advance of cancellation. If the surety cancels the bond, the owner must obtain alternate financial assurance as specified in this section.

- (7) The owner may cancel the bond only if alternate financial assurance is substituted as specified in this section or if the owner is no longer required to demonstrate financial responsibility in accordance with paragraphs F.1.b, F.2.b or F.3.b of this section.

c. Letter of Credit.

- (1) An owner may satisfy the requirements of this section by obtaining an irrevocable standby letter of credit, which conforms to the requirements of this paragraph. The letter of credit must be effective before the initial receipt of waste in the case of closure and post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of paragraph D.8 of this section. The owner must notify the Department that a copy of the letter of credit has been placed in the operating record. 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 of Mississippi agency.
- (2) A letter from the owner referring to the letter of credit by number, issuing institution, and date, and providing the following information: name, and address of the facility, and the amount of funds assured, must be included with the letter of credit in the operating record.
- (3) The letter of credit must be irrevocable and issued for a period of at least one year in an amount at least equal to the current cost estimate for closure, post-closure care or corrective action, whichever is applicable, except as provided in paragraph F.4.g of this section. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless the issuing institution has canceled the letter of credit by sending notice of cancellation by certified mail to the owner and to the Department 120 days in advance of cancellation. If the letter of credit is canceled by the issuing institution, the owner must obtain alternate financial assurance.
- (4) The owner may cancel the letter of credit only if alternate financial assurance is substituted as specified in this section or if the owner is released from the requirements of this section in accordance with paragraphs F.1.b, F.2.b or F.3.b of this section.

d. Insurance.

- (1) An owner may demonstrate financial assurance for closure and post-closure care by obtaining insurance, which conforms to the requirements of this paragraph. The insurance must be effective before the initial receipt of waste. At a minimum, the insurer must be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in the State of Mississippi. The

owner must notify the Department that a copy of the insurance policy has been placed in the operating record.

- (2) The closure or post-closure care insurance policy must guarantee that funds will be available to close the MSWLF unit or other landfill whenever final closure occurs or to provide post-closure care for the MSWLF unit or other landfill whenever the post-closure care period begins, whichever is applicable. The policy must also guarantee that once closure or post-closure care begins, the insurer will be responsible for the paying out of funds to the owner or other person authorized to conduct closure or post-closure care, up to an amount equal to the face amount of the policy.
- (3) The insurance policy must be issued for a face amount at least equal to the current cost estimate for closure or post-closure care, whichever is applicable, except as provided in paragraph F.4.a. of this section. 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) An owner, or any other person authorized to conduct closure or post-closure care, may receive reimbursements for closure or post-closure expenditures, whichever is applicable. Requests for reimbursement will be granted by the insurer only if the remaining value of the policy is sufficient to cover the remaining costs of closure or post-closure care, and if justification and documentation of the cost is placed in the operating record. The owner must notify the Department that the documentation of the justification for reimbursement has been placed in the operating record and that reimbursement has been received.
- (5) Each policy must contain a provision allowing assignment of the policy to a successor owner. Such assignment may be conditional upon consent of the insurer, provided that such consent is not unreasonably refused.
- (6) The insurance 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 cancel the policy by sending notice of cancellation by certified mail to the owner and to the Department 120 days in advance of cancellation. If the insurer cancels the policy, the owner must obtain alternate financial assurance as specified in this section.
- (7) For insurance policies providing coverage for post-closure care, 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 85 percent of the most recent investment rate or of the equivalent coupon-issue yield announced by the U.S. Treasury for 26-week Treasury securities.

- (8) The owner may cancel the insurance policy only if alternate financial assurance is substituted as specified in this section or if the owner is no longer required to demonstrate financial responsibility in accordance with the requirements of paragraphs F.1.b, F.2.b or F.3.b of this section.

e. Corporate Financial Test

An owner may satisfy the requirements of this section by demonstrating financial assurance up to the amount specified in this section:

- (1) Financial component.
 - (i) The owner must satisfy one of the following three conditions:
 - (A) A current rating for its senior unsubordinated debt of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A or Baa as issued by Moody's;
 - (B) A ratio of less than 1.5 comparing total liabilities to net worth; or
 - (C) A ratio of greater than 0.10 comparing the sum of net income plus depreciation, depletion and amortization, minus \$10 million, to total liabilities.
 - (ii) The tangible net worth of the owner must be greater than:
 - (A) The sum of the current closure, post-closure care, corrective action cost estimates and any other environmental obligations, including guarantees, covered by a financial test plus \$10 million except as provided in paragraph F.4.e.1.ii.B of this section.
 - (B) \$10 million in net worth plus the amount of any guarantees that have not been recognized as liabilities on the financial statements provided all of the current closure, post-closure care, and corrective action costs and any other environmental obligations covered by a financial test are recognized as liabilities on the owner's audited

financial statements, and subject to the approval of the State Director.

(iii) The owner must have assets located in the United States amounting to at least the sum of current closure, post-closure care, corrective action cost estimates and any other environmental obligations covered by a financial test as described in paragraph F.4.e.3 of this section.

(2) Recordkeeping and Reporting Requirements.

(i) The owner or operator must place the following items into the facility's operating record:

(A) A letter signed by the owner's chief financial officer that:

(1) Lists all the current cost estimates covered by a financial test, including, but not limited to, cost estimates required for municipal solid waste management facilities under these regulations, cost estimates required for UIC facilities under 40 CFR part 144, if applicable, cost estimates required for petroleum underground storage tank facilities under 40 CFR part 280, if applicable, cost estimates required for PCB storage facilities under 40 CFR part 761, if applicable, and cost estimates required for hazardous waste treatment, storage, and disposal facilities under 40 CFR parts 264 and 265, if applicable; and

(2) Provides evidence demonstrating that the firm meets the conditions of either paragraph F.4.e.1.i.A or F.4.e.1.i.B or F.4.e.1.i.C of this section and paragraphs F.4.e.1.ii and F.4.e.1.iii of this section.

(B) A copy of the independent certified public accountant's unqualified opinion of the owner's financial statements for the latest completed fiscal year. To be eligible to use the financial test, the owner's financial statements must receive an unqualified opinion from the independent certified public accountant. An adverse opinion, disclaimer of opinion, or other qualified opinion will be cause for disallowance, with the

potential exception for qualified opinions provided in the next sentence. The Director of an approved State may evaluate qualified opinions on a case-by-case basis and allow use of the financial test in cases where the Director deems that the matters which form the basis for the qualification are insufficient to warrant disallowance of the test. If the Director of an approved State does not allow use of the test, the owner must provide alternate financial assurance that meets the requirements of this section.

(C) If the chief financial officer's letter providing evidence of financial assurance includes financial data showing that owner satisfies paragraph F.4.e.(1)(i)(B) or F.4.e.(1)(i)(C) of this section that are different from data in the audited financial statements referred to in paragraph F.4.e.(2)(i)(B) of this section or any other audited financial statement or data filed with the SEC, then a special report from the owner's independent certified public accountant to the owner is required. The special report shall be based upon an agreed upon procedures engagement in accordance with professional auditing standards and shall describe the procedures performed in comparing the data in the chief financial officer's letter derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements, the findings of that comparison, and the reasons for any differences.

(D) If the chief financial officer's letter provides a demonstration that the firm has assured for environmental obligations as provided in paragraph F.4.e.(1)(ii)(B) of this section, then the letter shall include a report from the independent certified public accountant that verifies that all of the environmental obligations covered by a financial test have been recognized as liabilities on the audited financial statements, how these obligations have been measured and reported, and that the tangible net worth of the firm is at least \$10 million plus the amount of any guarantees provided.

- (ii) An owner must place the items specified in paragraph F.4.e.(2)(i) of this section in the operating record and notify the State Director that these items have been placed in the operating record before the initial receipt of waste in the case of closure, and post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of paragraph D.8 of this Section.
- (iii) After the initial placement of items specified in paragraph F.4.e.2(i) of this section in the operating record, the owner must annually update the information and place updated information in the operating record within 90 days following the close of the owner's fiscal year. The Director of a State may provide up to an additional 45 days for an owner who can demonstrate that 90 days is insufficient time to acquire audited financial statements. The updated information must consist of all items specified in paragraph F.4.e.(2)(i) of this section.
- (iv) The owner is no longer required to submit the items specified in this paragraph F.4.e.(2) or comply with the requirements of this section when:
 - (A) He substitutes alternate financial assurance as specified in this section that is not subject to these recordkeeping and reporting requirements; or
 - (B) He is released from the requirements of this section in accordance with paragraphs F.1.b, F.2.b or F.3.b of this Section.
- (v) If the owner no longer meets the requirements of paragraph F.4.e.(1) of this section, the owner must, within 120 days following the close of the owner's fiscal year, obtain alternative financial assurance that meets the requirements of this section, place the required submissions for that assurance in the operating record, and notify the State Director that the owner no longer meets the criteria of the financial test and that alternate assurance has been obtained.
- (vi) The Director of an approved State may, based on a reasonable belief that the owner or operator may no longer meet the requirements of paragraph F.4.e.(1) of this section, require at any time the owner to provide reports of its

financial condition in addition to or including current financial test documentation as specified in paragraph F.2.e.(2) of this section. If the Director of an approved State finds that the owner no longer meets the requirements of paragraph F.4.e.(1) of this section, the owner must provide alternate financial assurance that meets the requirements of this section.

- (3) Calculation of costs to be assured. When calculating the current cost estimates for closure, post-closure care, corrective action, or the sum of the combination of such costs to be covered, and any other environmental obligations assured by a financial test referred to in this section, the owner must include cost estimates required for municipal solid waste management facilities under this part, as well as cost estimates required for the following environmental obligations, if it assures them through a financial test: obligations associated with UIC facilities under 40 CFR part 144, petroleum underground storage tank facilities under 40 CFR part 280, PCB storage facilities under 40 CFR part 761, and hazardous waste treatment, storage, and disposal facilities under 40 CFR parts 264 and 265.

f. Local Government Financial Test.

An owner may satisfy the requirements of paragraphs F.4.f.(1) through F.4.f.(3) of this section by demonstrating financial assurance up to the amount specified in paragraph F.4.f.(4) of this section:

- (1) Financial component.
 - (i) The owner must satisfy paragraph F.4.f.(1)(i)(A) or (B) of this section as applicable:
 - (A) If the owner has outstanding, rated, general obligation bonds that are not secured by insurance, a letter of credit, or other collateral or guarantee, it must have a current rating of Aaa, Aa, A, or Baa, as issued by Moody's, or AAA, AA, A, or BBB, as issued by Standard and Poor's on all such general obligation bonds; or
 - (B) The owner must satisfy each of the following financial ratios based on the owner's most recent audited annual financial statement:
 - (1) A ratio of cash plus marketable securities to total expenditures greater than or equal to 0.05; and

- (2) A ratio of annual debt service to total expenditures less than or equal to 0.20.
- (ii) The owner must prepare its financial statements in conformity with Generally Accepted Accounting Principles for governments and have its financial statements audited by an independent certified public accountant (or appropriate State agency).
- (iii) A local government is not eligible to assure its obligations under paragraph F.4.f of this Section, if it:
 - (A) Is currently in default on any outstanding general obligation bonds; or
 - (B) Has any outstanding general obligation bonds rated lower than Baa as issued by Moody's or BBB as issued by Standard and Poor's; or
 - (C) Operated at a deficit equal to five percent or more of total annual revenue in each of the past two fiscal years; or
 - (D) Receives an adverse opinion, disclaimer of opinion, or other qualified opinion from the independent certified public accountant (or appropriate State agency) auditing its financial statement as required under paragraph F.4.(f)(1)(ii) of this section. However, the Director of an approved State may evaluate qualified opinions on a case-by-case basis and allow use of the financial test in cases where the Director deems the qualification insufficient to warrant disallowance of use of the test.
- (iv) The following terms used in this paragraph are defined as follows:
 - (A) Deficit equals total annual revenues minus total annual expenditures;
 - (B) Total revenues include revenues from all taxes and fees but does not include the proceeds from borrowing or asset sales, excluding revenue from funds managed by local government on behalf of a specific third party;

- (C) Total expenditures include all expenditures excluding capital outlays and debt repayment;
 - (D) Cash plus marketable securities is all the cash plus marketable securities held by the local government on the last day of a fiscal year, excluding cash and marketable securities designated to satisfy past obligations such as pensions; and
 - (E) Debt service is the amount of principal and interest due on a loan in a given time period, typically the current year.
- (2) Public notice component. The local government owner must place a reference to the closure and post-closure care costs assured through the financial test into its next comprehensive annual financial report (CAFR) prior to the initial receipt of waste at the facility. Disclosure must include the nature and source of closure and post-closure care requirements, the reported liability at the balance sheet date, the estimated total closure and post-closure care cost remaining to be recognized, the percentage of landfill capacity used to date, and the estimated landfill life in years. A reference to corrective action costs must be placed in the CAFR not later than 120 days after the corrective action remedy has been selected in accordance with the requirements of paragraph D.8 of this Section. For the first year the financial test is used to assure costs at a particular facility, the reference may instead be placed in the operating record until issuance of the next available CAFR if timing does not permit the reference to be incorporated into the most recently issued CAFR or budget. For closure and post-closure costs, conformance with Government Accounting Standards Board Statement 18 assures compliance with this public notice component.
- (3) Recordkeeping and Reporting Requirements.
- (i) The local government owner must place the following items in the facility's operating record:
 - (A) A letter signed by the local government's chief financial officer that:
 - (1) Lists all the current cost estimates covered by a financial test, as described in paragraph F.4.f.(4) of this section;

- (2) Provides evidence and certifies that the local government meets the conditions of paragraphs F.4.f.(1)(i), F.4.f.(1)(ii), and F.4.f.(1)(iii) of this section; and
 - (3) Certifies that the local government meets the conditions of paragraphs F.2.f.(2) and F.4.f.(4) of this section.
 - (B) The local government's independently audited year-end financial statements for the latest fiscal year (except for local governments where audits are required every two years where unaudited statements may be used in years when audits are not required), including the unqualified opinion of the auditor who must be an independent, certified public accountant or an appropriate State agency that conducts equivalent comprehensive audits;
 - (C) A report to the local government from the local government's independent certified public accountant (CPA) or the appropriate State agency based on performing an agreed upon procedures engagement relative to the financial ratios required by paragraph F.4.f(1)(i)(B) of this section, if applicable, and the requirements of paragraphs F.4.f(1)(ii) and F.4.f.(1)(iii)(C)and(D) of this section. The CPA or State agency's report should state the procedures performed and the CPA or State agency's findings; and
 - (D) A copy of the comprehensive annual financial report (CAFR) used to comply with paragraph F.4.f.(2) of this section or certification that the requirements of General Accounting Standards Board Statement 18 have been met.
- (ii) The items required in paragraph F.4.f.(3)(i) of this section must be placed in the facility operating record as follows:
 - (A) In the case of closure and post-closure care, prior to the initial receipt of waste at the facility; or
 - (B) In the case of corrective action, not later than 120 days after the corrective action remedy is selected in accordance

with the requirements of paragraph D.8 of this Section.

- (iii) After the initial placement of the items in the facility's operating record, the local government owner must update the information and place the updated information in the operating record within 180 days following the close of the owner's fiscal year.
 - (iv) The local government owner is no longer required to meet the requirements of paragraph F.4.f.(3) of this section when:
 - (A) The owner substitutes alternate financial assurance as specified in this section; or
 - (B) The owner is released from the requirements of this section in accordance with paragraphs F.1.b, F.2.b, or F.3.b of this Section.
 - (v) A local government must satisfy the requirements of the financial test at the close of each fiscal year. If the local government owner or operator no longer meets the requirements of the local government financial test it must, within 210 days following the close of the owner fiscal year, obtain alternative financial assurance that meets the requirements of this section, place the required submissions for that assurance in the operating record, and notify the State Director that the owner no longer meets the criteria of the financial test and that alternate assurance has been obtained.
 - (vi) The Director of an approved State, based on a reasonable belief that the local government owner may no longer meet the requirements of the local government financial test, may require additional reports of financial condition from the local government at any time. If the Director of an approved State finds, on the basis of such reports or other information, that the owner no longer meets the requirements of the local government financial test, the local government must provide alternate financial assurance in accordance with this section.
- (4) Calculation of costs to be assured. The portion of the closure, post-closure, and corrective action costs for which an owner can assure under this paragraph is determined as follows:

- (i) If the local government owner does not assure other environmental obligations through a financial test, it may assure closure, post-closure, and corrective action costs that equal up to 43 percent of the local government's total annual revenue.
- (ii) If the local government assures other environmental obligations through a financial test, including those associated with UIC facilities under 40 CFR 144.62, petroleum underground storage tank facilities under 40 CFR Part 280, PCB storage facilities under 40 CFR Part 761, and hazardous waste treatment, storage, and disposal facilities under 40 CFR Parts 264 and 265, it must add those costs to the closure, post-closure, and corrective action costs it seeks to assure under this paragraph. The total that may be assured must not exceed 43 percent of the local government's total annual revenue.
- (iii) The owner must obtain an alternate financial assurance instrument for those costs that exceed the limits set in paragraphs F.4.f.(4) (i) and (ii) of this section.

g. Corporate Guarantee

- (1) An owner may meet the requirements of this section by obtaining a written guarantee. The guarantor must be the direct or higher-tier parent corporation of the owner, a firm whose parent corporation is also the parent corporation of the owner, or a firm with a "substantial business relationship" with the owner. The guarantor must meet the requirements for owners in paragraph F.4.e of this section and must comply with the terms of the guarantee. A certified copy of the guarantee must be placed in the facility's operating record along with copies of the letter from the guarantor's chief financial officer and accountants' opinions. If the guarantor's parent corporation is also the parent corporation of the owner, the letter from the guarantor's chief financial officer must describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner, this letter must describe this "substantial business relationship" and the value received in consideration of the guarantee.
- (2) The guarantee must be effective and all required submissions placed in the operating record before the initial receipt of waste or before the effective date of the requirements of this section, in the case of closure and post-closure care, or in the case of corrective action no later than 120 days after the

corrective action remedy has been selected in accordance with the requirements of paragraph D.8 of this Section.

- (3) The terms of the guarantee must provide that:
- (i) If the owner fails to perform closure, post-closure care, and/or corrective action of a facility covered by the guarantee, the guarantor will:
 - (A) Perform, or pay a third party to perform, closure, post-closure care, and/or corrective action as required (performance guarantee); or
 - (B) Establish a fully funded trust fund as specified in paragraph F.4.a of this section in the name of the owner (payment guarantee).
 - (ii) The guarantee will remain in force for as long as the owner must comply with the applicable financial assurance requirements of this Subpart unless the guarantor sends prior notice of cancellation by certified mail to the owner and to the State Director. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner and the State Director, as evidenced by the return receipts.
 - (iii) If notice of cancellation is given, the owner must, within 90 days following receipt of the cancellation notice by the owner and the State Director, obtain alternate financial assurance, place evidence of that alternate financial assurance in the facility operating record, and notify the State Director. If the owner fails to provide alternate financial assurance within the 90-day period, the guarantor must provide that alternate assurance within 120 days of the cancellation notice, obtain alternative assurance, place evidence of the alternate assurance in the facility operating record, and notify the State Director.
- (4) If a corporate guarantor no longer meets the requirements of paragraph F.4.g.1 of this section, the owner or operator must, within 90 days, obtain alternative assurance, place evidence of the alternate assurance in the facility operating record, and notify the State Director. If the owner fails to provide alternate financial assurance within the 90-day period, the guarantor must provide that alternate assurance within the next 30 days.

- (5) The owner is no longer required to meet the requirements of this paragraph F.4.g when:
 - (i) The owner substitutes alternate financial assurance as specified in this section; or
 - (ii) The owner is released from the requirements of this section in accordance with paragraphs F.1.b, F.2.b or F.3.b of this Section.

h. Local Government Guarantee.

An owner may demonstrate financial assurance for closure, post-closure, and corrective action, as required by paragraphs F.1.b, F.2.b, and F.3.b of this Section by obtaining a written guarantee provided by a local government. The guarantor must meet the requirements of the local government financial test in paragraph F.4.f of this section, and must comply with the terms of a written guarantee.

- (1) Terms of the written guarantee. The guarantee must be effective before the initial receipt of waste or before the effective date of this section, whichever is later, in the case of closure, post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of paragraph D.8 of this Section. The guarantee must provide that:
 - (i) If the owner fails to perform closure, post-closure care, and/or corrective action of a facility covered by the guarantee, the guarantor will:
 - (A) Perform, or pay a third party to perform, closure, post-closure care, and/or corrective action as required; or
 - (B) Establish a fully funded trust fund as specified in paragraph F.4.a of this section in the name of the owner.
 - (ii) The guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner and to the State Director. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner and the State Director, as evidenced by the return receipts.
 - (iii) If a guarantee is cancelled, the owner must, within 90 days following receipt of the cancellation notice by the owner and the State Director, obtain alternate financial assurance, place evidence of that alternate financial

assurance in the facility operating record, and notify the State Director. If the owner fails to provide alternate financial assurance within the 90-day period, the guarantor must provide that alternate assurance within 120 days following the guarantor's notice of cancellation, place evidence of the alternate assurance in the facility operating record, and notify the State Director.

(2) Recordkeeping and reporting.

(i) The owner must place a certified copy of the guarantee along with the items required under paragraph F.4.f.(3) of this section into the facility's operating record before the initial receipt of waste or before the effective date of this section, whichever is later, in the case of closure, post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of paragraph D.8 of this Section.

(ii) The owner is no longer required to maintain the items specified in paragraph F.4.h(2) of this section when:

(A) The owner substitutes alternate financial assurance as specified in this section; or

(B) The owner is released from the requirements of this section in accordance with paragraphs F.1.b, F.2.b or F.3.b of this Section.

(iii) If a local government guarantor no longer meets the requirements of paragraph F.4.f of this section, the owner, must, within 90 days, obtain alternative assurance, place evidence of the alternate assurance in the facility operating record, and notify the State Director. If the owner fails to obtain alternate financial assurance within that 90-day period, the guarantor must provide that alternate assurance within the next 30 days.

i. Other Mechanisms.

An owner may satisfy the requirements of this section by providing evidence of financial assurance through the use of any mechanism that is adopted by the U.S. Environmental Protection Agency under Part 258, Subpart G, of Title 40 of the Code of Federal Regulations, or any other mechanism that meets the criteria specified in paragraph F.4.k of this section and that is approved by the Commission.

j. Use of Multiple Financial Mechanisms.

An owner may satisfy the requirements of this section by establishing more than one financial mechanism per facility. The mechanisms must be as specified in paragraphs F.4.a through F.4.i of this section, 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 cost estimate for closure, post-closure care or corrective action, whichever is applicable. The financial test and a guarantee provided by a corporate parent, sibling, or grandparent may not be combined if the financial statements of the two firms are consolidated.

k. The language of the mechanisms listed in paragraphs F.4.a through F.4.i of this section must ensure that the instruments satisfy the following criteria:

- (1) the financial assurance mechanisms must ensure that the amount of funds assured is sufficient to cover the costs of closure, post-closure care, and corrective action for known releases when needed;
- (2) the financial assurance mechanisms must ensure that funds will be available in a timely fashion when needed;
- (3) the financial assurance mechanisms must be obtained by the owner by the effective date of these regulations in the case of closure and post-closure care, and no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of paragraph D.8. of this section, until the owner is released from the financial assurance requirements under paragraphs F.1, F.2 and F.3 of this section; and
- (4) the financial assurance mechanisms must be legally valid, binding, and enforceable under State of Mississippi and Federal law.

SECTION V. TRANSFER STATION, STORAGE, COLLECTION, AND TRANSPORTATION REQUIREMENTS

A. Transfer Station Permit Requirements

1. An individual permit or a certificate of coverage under a general permit is required for the operation of a transfer station. The individual permit or certificate of coverage under any applicable general permit must be issued prior to the receipt of any waste.
2. An applicant for a new transfer station shall complete an application for coverage under any applicable general permit or for an individual permit on forms provided by the Department. Such submittal shall demonstrate that the transfer station will comply with all applicable requirements of Sections II, III and V of these regulations and the terms and conditions of a general permit or an individual permit.
3. Owners of existing transfer stations, which have been previously issued an individual permit, may request that their permit be revoked and that they be issued a certificate of coverage under any applicable general permit. Likewise, owners of existing transfer stations, which have been previously issued a certificate of coverage under a general permit, may request that their certificate of coverage be revoked and that they be issued an individual permit.

B. Transfer Stations shall be operated in accordance with the following requirements as well as the general requirements of Section V.C:

1. Access to a transfer station shall not be allowed to the general public unless an attendant is on-site at all times the facility is open.
2. Unless a transfer station is operated within an enclosed building, a wood or wire fence shall be constructed around the facility for the purpose of preventing any windblown litter from escaping the property. The Department may grant a waiver from this requirement if the applicant demonstrates to the satisfaction of the Department another acceptable method of containing the litter.
3. Litter shall be collected at the end of each operating day or as necessary to keep the property reasonably clean.
4. Open burning of solid waste, except for land clearing debris generated on the site of the facility, shall be prohibited at a transfer station.
5. Transfer stations, which accept household garbage or other putrescible wastes, must be designed to contain all off-loading and storage of solid wastes within a walled and roofed structure that will prevent windblown litter, stormwater contact and unauthorized discharge of leachate and contaminated stormwater. An alternate design may be approved by the Department upon sufficient demonstration by the owner that the alternate design will prevent windblown litter and will adequately collect and contain leachate and contaminated stormwater.
6. All garbage and other putrescible waste must be removed at least once per week or more frequently where necessary to maintain sanitary conditions at the site.
7. Requirements for Tipping Floor Transfer Stations

- a. All tipping floors and other related equipment shall be washed down or other wise cleaned a minimum of once per day to reduce odors and to maintain appropriate sanitary working conditions.
 - b. All tipping floor and equipment washwater shall be collected and properly disposed of according to the applicable wastewater regulations of the Commission on Environmental Quality.
8. All solid waste transported from a transfer station must be delivered to an authorized waste disposal facility or to another facility acceptable to the Department.

C. Storage, Collection, and Transportation

1. All solid waste shall be stored in such a manner that it does not constitute a fire, safety or health hazard or provide food or harborage for animals and vectors, and shall be contained or bundled so as not to result in litter. It shall be the responsibility of the occupant of a residence or the owner or manager of an establishment to utilize a storage system that will include containers of adequate size and strength, and in sufficient numbers, to contain all solid waste that the residence or other establishment generates in the period of time between collections. The owner or, if leased, the leasee of the storage containers shall be responsible for compliance with this requirement.
2. Solid waste containing putrescible materials shall be collected and transported to a disposal facility at a frequency adequate to prevent propagation and attraction of vectors and the creation of a public health nuisance.
3. All vehicles and equipment used for the collection and transportation of a solid waste shall be constructed, operated and maintained to prevent loss of liquids or solid waste material, and to minimize health and safety hazards to solid waste management personnel and the public. Collection vehicles and equipment shall be maintained in a sanitary condition to preclude odors and fly-breeding.
4. Areas where solid wastes are spilled during collection and/or transportation shall be promptly cleaned and remediated.

SECTION VI. RUBBISH SITE REQUIREMENTS

- A.
1. An individual permit or a certificate of coverage under a general permit is required for the operation of a rubbish site. The individual permit or certificate of coverage must be issued prior to the receipt of any waste at the site.
 2. An applicant for a new rubbish site shall complete an application for coverage under any applicable general permit or an application for an individual permit on forms provided by the Department. Such submittal shall demonstrate that the facility will comply with all applicable requirements of Sections II, III and VI of these regulations and the terms and conditions of a general permit or an individual permit.
 3. Owners of existing rubbish sites, which have been issued an individual permit, may request that their permit be revoked and that they be issued a certificate of coverage under any applicable general permit. Likewise, owners of existing rubbish sites, which have previously issued a certificate of coverage under a general permit, may request that their certificate of coverage be revoked and that they be issued an individual permit.
- B. A Class I Rubbish Site may receive the following wastes for disposal:
1. construction and demolition debris, such as wood, metal, etc.
 2. brick, mortar, concrete, stone, and asphalt
 3. cardboard boxes
 4. natural vegetation, such as tree limbs, stumps, and leaves.
 5. appliances (other than refrigerators and air conditioners) which have had the motor removed
 6. furniture
 7. plastic, glass, crockery, and metal, except containers
 8. sawdust, wood shavings, and wood chips
 9. other similar wastes specifically approved by the Department.
- C. A Class II Rubbish Site may receive the following wastes for disposal:
1. natural vegetation, such as tree limbs, stumps, and leaves
 2. brick, mortar, concrete, stone, and asphalt
 3. other similar rubbish specifically approved by the Department.
- D. The following wastes shall be prohibited from disposal at all rubbish sites:
1. any acceptable waste which has been contaminated by a pollutant, such as a food or chemical, unless it can be demonstrated to the satisfaction of the Department that such waste has no adverse effect on the environment.
 2. household garbage and other food and drink waste
 3. liquids, sludges, and contaminated soils
 4. paint, paint buckets, oil containers and chemical containers
 5. engines, motors, whole tires, and all types of batteries
 6. toxic or hazardous waste
 7. Regulated asbestos and asbestos containing material originating from a facility, as defined by the National Emission Standards for Hazardous Air Pollutants (40 CFR 61, Subpart M)
 8. medical waste
 9. bulk fabric and paper loads, refrigerators, air conditioners, cut or shredded tires, and any metal, glass, plastic, or paper container, unless specifically approved by the Department. The Department shall consider the characteristics of the waste, the operating plan of the site, and other site specific conditions in determining the acceptability of any such waste

10. other waste which are specifically determined by the Department to have an adverse effect on the environment.
- E. Class I and Class II Rubbish Sites shall be operated in accordance with the following requirements:
1. Prior to the disposal of any solid waste, all borings drilled on site in preparation of the permit application, which will not be converted to monitoring or supply wells, shall be properly sealed in accordance with the requirements of the Office of Land and Water Resources.
 2. Adequate security and monitoring shall be established and maintained to prevent uncontrolled access and disposal. An attendant shall be on duty at any time access to the site is unsecured.
 3. Disposal of waste shall be limited to wastes described in applicable paragraph B. or C. of this section.
 4. Disposal activity shall be restricted to the area defined in the approved application. The disposal area boundaries shall be located and clearly marked by a land surveyor licensed by the State of Mississippi. At a minimum, the corners of the disposal area shall be marked. The markers shall be a minimum, 3-foot high concrete posts, metal pipes, weather resistant wood posts or other suitable markers approved by the Department. The markers shall be placed in the ground to a sufficient depth to facilitate permanence and shall be maintained by the owner. Markers that become damaged shall be promptly re-established by the owner with the assistance of a licensed land surveyor, where necessary.
 5. Prior to the unloading and disposal of each waste load, the facility operator or a designated, trained spotter shall visually inspect each waste load and remove any unauthorized wastes from the load. Incoming waste loads that contain significant amounts of unauthorized wastes shall be refused disposal at the facility. Incidental amounts of unauthorized wastes identified after waste unloading shall be immediately removed from the disposal area. All unauthorized wastes removed from incoming loads and/or the disposal area shall be collected and properly disposed at an authorized disposal facility.
 6. If a liner must be constructed at a facility, in whole or in part, as specified in the approved application, at least two weeks prior to disposal in the area, a construction quality assurance report shall be submitted to the Department. The report shall contain a certification from an independent professional engineer registered in Mississippi that the construction of the area was performed in accordance with the plans as stated in the approved application. Construction of the liner may be accomplished at one time with one certification, or in stages, each with a separate certification, as stated in the approved application.
 7. A periodic cover consisting of a minimum of six inches of earthen material shall be applied to the wastes at least every two weeks. The Department may alter the frequency of cover depending upon the amount or type of wastes received, the location of the site, and other conditions.
 8. Rubbish shall be managed so that it shall not become windblown or attract vectors.

9. Windblown and scattered litter and debris shall be collected from around the entire facility at the end of every operating day and returned to the active working area for proper disposal.
10. Open burning of solid waste, except for land clearing debris generated on the site of the facility, shall be prohibited. Open burning of land clearing debris shall be conducted in accordance with Section 3.7.b of the "Air Emission Regulations for the Prevention, Abatement, and Control of Air Contaminants."
11. An adequate supply of water under pressure at the site or an adequate stockpile of earthen material reasonably close to the disposal area shall be provided, or there shall be a nearby, organized Fire Department providing service when called. The Department may approve alternate methods of fire protection or waive this requirement when there is no need for fire protection. Should an accidental fire occur, the owner shall immediately take action to extinguish the fire and shall notify the Department by the close of the Department's next business day.
12. Rubbish shall not be disposed in standing water nor in any manner that may result in washout of waste. Furthermore, the active disposal area shall not be located or constructed in a manner that causes or allows wastes to come into contact with the seasonal high water table.
13. A rubbish site shall be developed and contoured to direct run-on and/or runoff away from the active disposal area and to prevent ponding of water in and over areas of waste disposal.
14. Unloading and disposal of rubbish shall be controlled by the owner and shall be confined to as small an area as practical.
15. Each commercial class I rubbish site must be operated by a person who holds a current certificate of competency issued by the Commission in accordance with Section III.B of the Regulations for the Certification of Operators of Solid Waste Disposal Facilities. Such person must have direct supervision over and be personally responsible for the daily operation and maintenance of the rubbish site.

In the event of the temporary loss of a certified operator due to illness, death, discharge, or other legitimate cause, written notice shall be given to the Department within 7 days. Continued operation of such system without a certified operator may proceed on an interim basis for a period not to exceed 180 days, except for good cause shown upon petition to the Commission.

16. The owner of a rubbish site must keep an accurate written daily record of deliveries of solid waste to the facility including but not limited to: the name of the hauler, the source of the waste, the types of waste received and the weight of solid waste measured in tons received at the facility. For those facilities that do not have access to weight scales, the weight should be converted to tons from cubic yards using conversion factors as developed or approved by the Department. A copy of these records must be maintained by the owner at the rubbish site or at another site approved by the Department. The records shall be made available to the Department for inspection, upon request.
17. The owner of a rubbish site shall submit an annual report to the Department each year no later than February 28th, to include information regarding the facility for the preceding calendar year. At a minimum, the report shall contain the following:

- a. the total amount of waste received during the calendar year, in units of tons, and the source of wastes listed by county of origin with a clear indication of wastes originating from out-of-state counties.
 - b. estimated remaining capacity at the facility, in terms of acreage, or cubic yards, and years remaining; and
 - c. if the owner of the facility or the contract operator of the facility is a private concern, an updated disclosure statement. If all information from the previously submitted disclosure statement is unchanged, a letter stating such may be included in lieu of an updated disclosure statement.
18. Within 30 days of completing an area, at least two feet of a low permeable earthen cover shall be applied as final cover. Following soil placement, suitable vegetation shall be promptly established and maintained. Any erosion occurring on completed areas shall be promptly repaired. Any area containing waste materials, which has not received waste in the past twelve (12) months, shall be covered in accordance with this paragraph.
 19. The final cover gradient on a rubbish site shall be a minimum of four percent (4%) and a maximum of twenty-five percent (25%), unless otherwise approved by the Department.
 20. The owner shall notify the Department within 14 days upon final closure of the site.
 21. The owner shall comply with any additional requirements included in the permit.

SECTION VII. PROCESSING FACILITY REQUIREMENTS

- A.
 1. An individual permit or a certificate of coverage of a general permit is required for the operation of a processing facility. An individual permit or certificate of coverage under any applicable general permit must be issued prior to the receipt of any waste.
 2. An applicant for a new processing facility shall complete an application for coverage under any applicable general permit or an individual permit on forms provided by the Department. Such submittal shall demonstrate that the facility will comply with all applicable requirements of Sections II, III and VII of these regulations and the terms and conditions of a general permit or an individual permit.
 3. Owners of existing processing facilities, which have been issued an individual permit, may request that their permit be revoked and that they be issued a certificate of coverage under any applicable general permit. Likewise, owners of existing processing facilities, which have been previously issued a certificate of coverage under a general permit may request that their certificate of coverage be revoked and that they be issued an individual permit.
- B. Processing facilities shall comply with all applicable federal and state air emission and wastewater discharge laws and regulations.
- C. Surface drainage in and around the facility shall be controlled to minimize surface water runoff onto, into, and off the treatment area.
- D. Any liquids accumulated at the facility, including leachate, washwater, or contaminated rainfall runoff, shall be controlled in a manner that will prevent obnoxious odors and pollution of waters of the State.
- E. Processing facilities shall be operated in manner that ensures the health, safety, and aesthetic aspects of a community are not endangered by the location and operation of the facility. Depending on the specific solid waste handling or processing operation involved, several of the operational standards prescribed for solid waste landfill sites may be applicable and shall be followed, if appropriate.
- F. The facility shall not accumulate solid waste in quantities that cannot be processed within such times as will preclude the creation of objectionable off-site odors, fly-breeding, or harborage of other vectors. If such accumulations occur, additional solid waste shall not be received until the adverse conditions are abated.
- G. If a significant work stoppage should occur at a solid waste processing facility, due to a mechanical breakdown or other cause and is anticipated to last long enough to create objectionable odors, fly-breeding, or harborage of vectors, steps shall be taken to remove the accumulated solid waste from the site to an approved alternate back-up processing or disposal facility.
- H. When processing putrescible wastes, all working surfaces that come in contact with wastes shall be washed down or otherwise cleaned as needed to prevent objectionable odors, vector breeding and harborage, nuisance conditions, or other unsanitary conditions.
- I. If a facility is not completely enclosed, wire or other type fencing or screening shall be provided when necessary to minimize windblown materials. Litter resulting from the operation shall be collected and returned to the processing area as frequently as necessary to minimize

unsightly conditions and fire hazards.

- J. Open burning of solid waste, except for land clearing debris generated on the site of the facility, shall be prohibited. An adequate supply of water under pressure at the site or an adequate stockpile of earth reasonably close to the processing area shall be provided, or there shall be a nearby organized Fire Department providing service when called. The Department may approve alternate methods of fire protection or waive this requirement when there is no need for fire protection. Should an accidental fire occur, the owner shall immediately take action to extinguish the fire and shall promptly notify the Department.

SECTION VIII. LAND APPLICATION REQUIREMENTS

- A.
 1. Except as provided for in Section I.B, an individual permit or a certificate of coverage of a general permit is required for the operation of a land application site. An individual permit or certificate of coverage under any applicable general permit must be issued prior to the receipt of any waste.
 2. An applicant for a new land application site shall complete an application for coverage under any applicable general permit or for an individual permit on forms provided by the Department. Such submittal shall demonstrate that the facility will comply with all applicable requirements of Sections II, III and VIII of these regulations and the terms and conditions of a general permit or an individual permit.
 3. Owners of existing land application sites, which have been issued an individual permit, may request that their permit be revoked and that they be issued a certificate of coverage under any applicable general permit. Likewise, owners of existing land application sites, which have been previously issued a certificate of coverage under a general permit, may request that their certificate of coverage be revoked and that they be issued an individual permit.
- B. No waste shall be placed on saturated grounds. Saturation may be determined by digging a hole one-foot deep at the lowest point of the ground and observing for 30 minutes. If water appears in the hole, the soil is considered to be saturated.
- C. Land application sites shall be located in a hydrologic section where the historic high water table is at a safe depth below the zone of incorporation.
- D. The application area shall be located a minimum of 300 feet from any inhabited building unless the applicant can justify otherwise. Furthermore, the Department may require larger buffer zones when circumstances warrant.
- E. Land application of wastes shall be conducted by incorporation into the soil, by injection below the land surface, or by other appropriate means of application, as approved by the Department. Incorporation should normally be accomplished by applying the wastes uniformly and disking or plowing until the waste is adequately turned under the soil or thoroughly mixed with the soil. Incorporation shall be accomplished during or immediately following application.
- F. Wastes which contain significant amounts of nitrogen shall be applied at an agronomic rate not to exceed the plant available nitrogen levels specified in Table 1 of this section, unless data can be presented to justify otherwise.
- G. The soil pH shall be maintained at or above 6.5 unless otherwise authorized by the Department.
- H. The annual loading rate for cadmium shall not exceed 0.45 pounds/acre/year.
- I. The cumulative (life-time) application of pollutants shall not exceed the levels specified in Table 2 of this section or where applicable, the levels specified in 40 CFR 503.
- J. In addition to the requirements in these regulations, land application of sewage sludge must be conducted in a manner which complies with 40

CFR 503 - Standards for the Use and Disposal of Sewage Sludge, which are incorporated herein and adopted by reference.

- K. Where sewage sludge is applied to public contact sites, access to the facility shall be controlled to restrict unauthorized personnel during operation and for at least 12 months following final application.
- L. Where sludge is applied, grazing by animals shall be restricted during operation and for 30 days thereafter.
- M. Prior to land application, sewage sludges and other pathogen-containing sludges shall be treated by a process to significantly reduce pathogens (PSRP) or by a process to further reduce pathogens (PFRP). The PSRP's and PFRP's are listed in Table 3 of this section.
- N. Where sludge is applied, no crops that will be consumed raw by humans shall be planted until at least 18 months have passed from the date of the last application. For all other crops grown for indirect human consumption, at least 30 days shall pass between the date of the last application and the date the crop is planted.
- O. Limitations may be placed on the loading rates of other contaminants when necessary to protect the environment and public health.
- P. Where the permit applicant and the solid waste generator are not the same person, the generator shall be responsible for ensuring that the waste characteristics are compatible with a safe disposal operation. Monitoring data, which characterizes the solid waste, shall be provided to the permittee by the generator on a regular basis as required by the permit. All other monitoring (groundwater, surface water, soils, etc.) shall be the responsibility of the permittee and shall be determined on a site-specific basis.
- Q. If substances that may be deleterious to human health are placed on the land in amounts that are in excess of those established as acceptable for growing food chain crops, notice of such shall be given to future landowners (via notice to the deed). When soil analyses show that such levels of contaminants are no longer present, the notice to future landowners shall not be required.

TABLE 1

**MAXIMUM PLANT AVAILABLE NITROGEN LEVELS
TO BE APPLIED TO CROPLANDS**

<u>CROP</u>	<u>MAXIMUM P.A.N. LBS/AC/YR)</u>
Bahia grass	160
Bermuda grass	300
Fescue	120
Grain sorghum	180
Silage sorghum	300
Millett	150
Rye grass	220
Alfalfa, clover, vetch	450
Cotton	180
Corn	240
Soybeans	300
Wheat	135

Other cover vegetation may be grown, if approved by the Department.

TABLE 2

**MAXIMUM CUMULATIVE POLLUTANT LOADING RATES
TO BE APPLIED AT LAND APPLICATION SITES**

	<u>Metals Loading Rates</u>					
	<u>CEC*</u>		<u>CEC*</u>		<u>CEC*</u>	
	<u>kg/ha</u>	<u>(lb/ac)</u>	<u>kg/ha</u>	<u>(lb/ac)</u>	<u>kg/ha</u>	<u>(lb/ac)</u>
Lead (Pb)	500	(455)	1000	(890)	2000	(1780)
Zinc (Zn)	250	(222)	500	(445)	1000	(890)
Copper (Cu)	125	(111)	250	(222)	500	(445)
Nickel (Ni)	125	(111)	250	(222)	500	(445)
Cadmium (Cd)	5	(4.4)	10	(8.9)	20	(17.8)

* CEC - Cation Exchange Capacity, meq/100

TABLE 3

PROCESSES TO SIGNIFICANTLY REDUCE PATHOGENS (PSRP)

Aerobic Digestion: The process is conducted by agitating sludge with air or oxygen to maintain conditions at residence times ranging from 60 days at 15 °C to 40 days at 20 °C, with a volatile solids reduction of at least 38 percent.

Air Drying: Liquid sludge is allowed to drain and/or dry on under-drained sand beds, or paved or unpaved basins in which the sludge is at a depth of nine inches. A minimum of three months is needed, two months of which temperatures average on a daily basis above 0 °C.

Anaerobic Digestion: The process is conducted in the absence of air at residence time ranging from 60 days at 20 °C to 15 days at 35 - 55 °C, with a volatile solids reduction of at least 38 percent.

Composting: Using the within-vessel, static aerated pile or windrow composting methods, the solid waste is maintained at minimum operating conditions of 40 °C for 5 days. For four hours during this period the temperature exceeds 55 °C.

Lime Stabilization: Sufficient lime is added to produce a pH of 12 after 2 hours of contact.

Other Methods: Other methods or operating conditions may be acceptable if pathogens and vector attraction of the waste (volatile solids) are reduced to an extent equivalent to the reduction achieved by any of the above methods.

PROCESSES TO FURTHER REDUCE PATHOGENS (PFRP)

Composting: Using the within-vessel method, the solid waste is maintained at operating conditions of 55 °C or greater for three days. Using the static aerated pile conditions of 55 °C or greater for three days. Using the windrow composting method, the solid waste attains a temperature of 55 °C or greater for at least 15 days during the composting period. Also, during the high temperature period, there will be a minimum of five turnings of the window.

Heat Drying: De-watered sludge cake is dried by direct or indirect contact with hot gases, and moisture content is reduced to 10 percent or lower. Sludge particles reach temperatures well in excess of 80 °C, or the wet bulb temperature of the gas stream in contact with the sludge at the point where it leaves the dryer is in excess of 80 °C.

Heat Treatment: Liquid sludge is heated to temperatures of 180 °C for 30 minutes.

Thermophillic Aerobic Digestion: Liquid sludge is agitated with air or oxygen to maintain aerobic conditions at residence times of 10 days at 55 - 60 °C, with a volatile solids reduction of at least 38 percent.

Other Methods: Other methods or operating conditions may be acceptable if pathogens and vector attraction of the waste (volatile solids) are reduced to an extent equivalent to the reduction achieved by any of the methods described above.

Any of the processes listed below, if added to one of the PSRP processes on Page 92, may be acceptable as the Processes to Further Reduce Pathogens.

Beta Ray Irradiation: Sludge is irradiated with beta rays from an accelerator at dosages of at least 1.0 megarad at room temperature (ca. 20 °C).

Gamma Ray irradiation: Sludge is irradiated with gamma rays from certain isotopes, such as 60 Cobalt and 137 Cesium, at dosages of at least 1.0 megarad at room temperature (ca. 20 °C).

Pasteurization: Sludge is maintained for at least 30 minutes at a minimum temperature of 70 °C.

Other Methods: Other methods or operating conditions may be acceptable if pathogens are reduced to an extent to the equivalent to the reduction achieved by any of the above methods.

SECTION IX. COMPOSTING FACILITY REQUIREMENTS

- A.
1. An individual permit or a certificate of coverage under a general permit is required for the operation of a composting facility. The individual permit or certificate of coverage under any applicable general permit must be issued prior to the receipt of any waste.
 2. An applicant for a new composting facility shall complete a notification of intent for coverage under any applicable general permit or an application for an individual permit on forms provided by the Department. Such submittal shall demonstrate that the facility will comply with all applicable requirements of Sections II, III and IX of these regulations and the terms and conditions of a general permit or an individual permit.
 3. Owners of existing composting facilities, which have been issued an individual permit, may request that their permit be revoked and that they be issued a certificate of coverage under any applicable general permit. Likewise, owners of existing composting facilities which have been previously issued a certificate of coverage under a general permit may request that their certificate of coverage be revoked and that they be issued an individual permit.
- B. Requirements for facilities that receive only yard waste or rubbish.
1. Access to the facility shall be closed to the general public unless an attendant is on site.
 2. Non-biodegradable bags, as well as all unauthorized waste materials, as determined by the Department, shall be removed from the compost and stored in appropriate containers for ultimate disposal or management at a facility approved by the Department.
 3. Open burning of solid waste, except for land clearing debris generated on the site of the facility, shall be prohibited. Immediate action shall be taken to extinguish any accidental fire and the Department shall be notified as soon as possible.
 4. Compost offered for use must be produced by a process that encompasses turning on a regular basis to aerate the waste, maintain temperatures, and/or reduce pathogens. Similar technologies that accomplish the same may also be considered by the Department.
 5. Surface water drainage shall be diverted around and away from the composting area and controlled to prevent any washing or escape of waste from the property. If the Department deems it necessary, a leachate collection and treatment system may be required.
 6. An annual report shall be submitted to the Department on or before February 28th of the following calendar year, which includes the following information:
 - a. the facility name, address, and permit number;
 - b. the total quantity, by weight or volume, of the waste received for composting;
 - c. the total quantity, by weight or volume, of all residuals and recyclables separated from the waste or compost, and a description of how these materials were disposed or

managed;

- d. the total quantity, by weight or volume, of the compost produced;
- e. the total quantity, by weight or volume, of the compost removed from the facility, and a description of how the compost was distributed or used; and,
- f. the remaining capacity for storage of compost at the facility based upon the amount of compost on site at the beginning of the year, the amount of compost produced, and the amount removed during the year.

C. Requirements for facilities that receive household garbage, wastewater sludge, animal wastes and manures and/or other solid waste with similar properties or characteristics, as determined by the Department.

1. Design requirements

- a. Specifications for site preparation must be included in the engineering design report developed for the site, such as clearing and grubbing, berm construction, drainage control structure, access roads, screening, fencing, etc.
- b. Surface water drainage shall be diverted around and away from the composting area and controlled to prevent any escape of waste from the property. Washdown water, leachate and any other contaminated water generated in the facility other than domestic wastewater shall be directed to sumps for use within the process. No discharge of contaminated water shall occur unless specifically allowed by the issuance of a wastewater permit.
- c. For facilities which process household garbage, the receiving area and the composting area must be covered with a roof capable of preventing rainfall from directly contacting the waste or compost. Final curing areas are not required to be roofed.

2. Operational Requirements

- a. The individual(s) responsible for making the decisions critical to the composting process such as turning, wetting, screening, etc., shall have a knowledge of the biological processes at work and the expertise and knowledge capable of operating the facility in compliance with the requirements of this sections.
- b. All waste delivered to the facility must be confined to a designated delivery or receiving area. For facilities which receive household garbage, the waste must be processed within 72 hours or removed and disposed in another appropriate facility.
- c. Access to the facility shall be controlled by a permanent fence and gate or enclosed buildings. All access points shall be secured whenever the facility is not open for business or when no authorized personnel are on site.
- d. Residuals and recyclables shall be stored in a manner to prevent vector intrusion and aesthetic degradation. Appropriate steps shall be taken as necessary to alleviate any problems with flies, mosquitoes, or other vectors. Recyclables shall be removed at least annually; non-

recyclable residuals shall be removed at least weekly.

e. Unless the Permit Board authorizes different operating conditions based upon a sufficient demonstration that such conditions would result in a compost of equal or better quality, the following conditions shall apply:

- (1) Where the windrow method of composting is utilized, a temperature of at least 55 °C must be maintained in the windrow for at least three weeks. Aerobic conditions must be maintained during the compost process. The windrow must be turned at least twice weekly during the three-week period.
- (2) Where the static aerated pile method of composting is utilized, a temperature of at least 55 °C must be maintained for at least seven days. Aerobic conditions must be maintained during the compost process.
- (3) Where the in-vessel method of composting is utilized, a retention time in the vessel must be at least 24 hours with the temperature maintained at 55 °C or higher. A stabilization period of at least seven days must follow the minimum retention period. Temperature in the compost pile must be maintained at least at 55 °C for at least three days during the stabilization period.

3. Testing and Monitoring

a. A composite sample of the compost produced shall be taken and analyzed at intervals of every 20,000 tons of compost produced or every three months, whichever comes first. At a minimum, the following tests shall be conducted:

<u>Parameter</u>	<u>Units to be Expressed</u>
Moisture	%
Total Nitrogen (as N)	% dry weight
Ammonia Nitrogen (as N)	% dry weight
Nitrate Nitrogen (as N)	% dry weight
Total Phosphorous	% dry weight
Total Potassium	% dry weight
Organic Matter	% dry weight
Reduction in Organic Matter	%
pH	standard units
Arsenic, Total	mg/kg dry weight
Arsenic, TCLP	ppm
Barium, Total	mg/kg dry weight
Barium, TCLP	ppm
Cadmium, Total	mg/kg dry weight
Cadmium, TCLP	ppm
Chromium, Total	mg/kg dry weight
Chromium, TCLP	ppm
Copper, Total	mg/kg dry weight
Lead, Total	mg/kg dry weight
Lead, TCLP	ppm
Mercury, Total	mg/kg dry weight
Mercury, TCLP	ppm
Nickel, Total	mg/kg dry weight
Selenium, Total	mg/kg dry weight
Selenium, TCLP	ppm
Silver, Total	mg/kg dry weight
Silver, TCLP	ppm
Zinc, Total	mg/kg dry weight

- c. In addition to the test parameters required in paragraph E.3.b of this section where sewage sludge, animal manures and wastes or other similar wastes are composted, a fecal coliform count shall be conducted before and after composting.
- d. The Permit Board may require additional or fewer test parameters or may increase or decrease the frequency of analysis based upon the quantity or characteristics of the waste, the location of the facility, or other factors which the Permit Board deems relevant.
- e. Composite samples of the compost taken pursuant to this section shall consist of at least five individual samples of equal volume taken from separate areas along the side of each pile of compost. Each sampling point shall be at a depth of two feet into the pile from the outside surface.
- f. Analytical methods for all tests shall be approved by the U.S. Environmental Protection Agency or the Department.
- g. The Permit Board may require other monitoring activities such as groundwater and/or surface water monitoring.
- h. The reduction in organic matter required pursuant to paragraph E.3.b of this section shall be determined by comparing the organic matter content of the feedstock and the organic matter content of the compost product, using the following calculation:

$$\% \text{ ROM} = \left[1 - \frac{\text{OMP} (100 - \text{OMF})}{\text{OMF} (100 - \text{OMP})} \right] \times 100$$

where % ROM = reduction in organic matter

OMF = % organic matter of the feedstock
(before decomposition)

OMP = % organic matter of the compost
product (after decomposition)

- 4. Recordkeeping and Reporting.
 - a. Records shall be maintained at the facility of the quantity of incoming waste, residuals and recyclables, and the quantity and quality of compost produced.
 - b. Records of analytical testing and monitoring shall be maintained for a period of at least five (5) years, including:
 - (1) the date of measurement and the person measuring the quantity of incoming waste, residuals, recyclables, and compost produced, and the results thereof;
 - (2) the dates all analyses were performed;
 - (3) the person or contract lab who performed all analyses;
 - (4) the analytical techniques or methods used; and
 - (5) the results of all analyses.
 - c. Records shall be available for inspection by Department

personnel during normal business hours and shall be sent to the Department upon request.

d. An annual report shall be submitted to the Department on or before February 28th of the following calendar year, which includes the following information:

- (1) the facility name, address, and permit number;
- (2) the total quantity in weight or volume of waste received at the facility;
- (3) the total quantity in weight or volume of all residuals and recyclables separated from the waste or compost, and a description of how these materials were disposed or managed;
- (4) the total quantity in tons (dry weight) or volume of waste processed for composting at the facility;
- (5) the total quantity in tons (dry weight) or volume of compost produced at the facility;
- (6) the total quantity in tons (dry weight) or volume of compost removed from the facility, and a description of how the compost was distributed, used, or disposed; and
- (7) the remaining capacity for storage of compost at the facility based upon the amount of compost on site at the beginning of the year, the amount of compost produced, and the amount removed during the year.

D. Classification of Compost

1. Compost shall be classified based upon the type of waste processed, product maturity, particle size, moisture content, and chemical quality.

a. Types of waste processed shall include the following:

- (1) yard waste or rubbish only;
- (2) sewage sludge;
- (3) animal manures and wastes,
- (4) household garbage, or other solid waste.
- (5) some combination of the above wastes

b. Product maturity.

- (1) Mature compost is a highly stabilized compost material that has been exposed to prolonged periods of decomposition. It will not reheat upon standing to greater than 20°C above ambient temperature. The material should be brown to black in color. This level of maturity is indicated by a reduction in organic matter of greater than 60%.
- (2) Semi-mature compost is compost material that is at the mesophilic stage. It may reheat upon standing to greater than 20°C above ambient temperature. The material should be light to dark brown in color.

This level of maturity is indicated by a reduction in organic matter of greater than or equal to 40% but less than or equal to 60%.

- (3) Fresh compost is compost material that has not completed the thermophilic stage and has undergone only partial decomposition. The material will reheat upon standing to greater than 20°C above ambient temperature. The material is usually similar in texture and color to the feedstock of the composting process. This level of maturity is indicated by a reduction in organic matter of greater than or equal to 20% but less than or equal to 40%.

c. Particle size.

- (1) Fine compost is compost that will pass a 10mm screen.
- (2) Coarse compost is compost that will not pass a 10mm screen, but will pass a 25mm screen.
- (3) Material, which will not pass a 25mm screen, shall be considered as residuals and not compost. It may be placed back into the compost process for additional reduction in size and decomposition.

d. Moisture content.

Any finished compost which is not mature shall have a moisture content no higher than 60% at the time it is released from the facility for distribution or use.

e. Chemical Quality.

The chemical quality of the compost shall be determined by the toxicity characteristics leaching procedure (TCLP) for the following metals, and shall be defined as either good or poor:

Metal	Good Quality	Poor Quality
Arsenic	< 0.5 ppm	0.5 - 5.0 ppm
Barium	<10.0 ppm	10.0 - 100 ppm
Cadmium	< 0.1 ppm	0.1 - 1.0 ppm
Chromium	< 0.5 ppm	0.5 - 5.0 ppm
Lead	< 0.5 ppm	0.5 - 5.0 ppm
Mercury	<0.02 ppm	0.02 - 0.2 ppm
Selenium	< 0.1 ppm	0.1 - 1.0 ppm
Silver	< 0.5 ppm	0.5 - 5.0 ppm

2. Compost shall be classified as follows:

- a. Class I is compost made only from yard waste and/or other rubbish, which is mature or semi-mature, and is fine or coarse. For such compost, the chemical quality is assumed to be good, and no analytical testing is required unless the Department has reason to believe that the quality of the compost may not be good. If the compost is semi-mature, the moisture content must be less than or equal to 60%
- b. Class II is compost made from sewage sludge, or from yard waste/rubbish mixed with sewage sludge, which is mature, fine, and has a good chemical quality.
- c. Class III is compost made from household garbage or any

other solid wastes with similar properties or characteristics, which is mature, fine, and has a good chemical quality.

- d. Class IV is compost made from household garbage or any other solid wastes with similar properties or characteristics, which is mature or semi-mature, and is fine or coarse, and has a good chemical quality. If the compost is semi-mature, the moisture content must be less than or equal to 60%.
- e. Class V is compost made from any solid waste which is fresh, or which has a poor chemical quality.

E. Compost distribution and use.

- 1. Compost classified as Class I or II shall have unrestricted distribution.
- 2. Compost classified as Class III or IV shall be restricted to use by commercial, agricultural, institutional, or governmental operations. However, if it is used where contact with the general public is likely, such as in a park, only Class III compost may be used.
- 3. Compost classified as Class V shall only be used as landfill cover, with the specific approval of the Department.
- 4. Compost, which cannot be processed to meet the definition of one of the five classifications in Part F.2 of this section, must be disposed in a facility approved by the Department.
- 5. A release form shall be provided to every person who receives for distribution or use compost classified as Class II, III, or IV, which contains, at a minimum, the following information:
 - a. the name of the person to whom the compost is released, and the date released;
 - b. the classification and quantity of compost released;
 - c. the results of the latest chemical analysis of the compost conducted pursuant to paragraph E.3. of this section;
 - d. the amount of total cadmium, copper, nickel, lead and zinc present in the compost, expressed in pounds per dry ton of compost;
 - e. the maximum allowable compost application rate (MACAR), in tons per acre, based upon the concentration of total cadmium, copper, nickel, lead and zinc, as computed and restricted in paragraph G.6 of this section;
 - f. a statement that any application of the compost in excess of the maximum allowable compost application rate as shown on this form is a violation of the laws of the State of Mississippi;
 - g. if the compost is classified as Class IV, a statement that the compost shall not be applied where contact with the general public is likely, such as in a park.
 - h. the signature of a representative of the compost facility and the person to whom the compost is released.

If the person listed in paragraph G.5.a of this section indicates in the release form that he/she will not distribute or use the compost within the State of Mississippi, or, if the compost will only be used for landfill cover, the information in paragraph G.5.d, G.5.e, or G.5.f of this section are not required to be provided.

6. The maximum allowable compost application rate (MACAR) shall be computed according to the following equation:

$$\{MACAR\}_M = \frac{\{MAMAR\}_M}{\{CONC\}_M \times 10^{-6} \times 2000}$$

where $\{MACAR\}_M$ =maximum allowable compost application rate, in tons/ac/yr, based upon the specific metals listed in paragraph G.7.a of this section.

$\{MAMAR\}_M$ =maximum allowable metal application rate, in lbs/ac/yr, for each of the metals listed in paragraph G.7.a of this section.

$\{CONC\}_M$ =the total metal concentration, in mg/kg dry weight, for each of the metals listed in paragraph G.7.a of this section.

After computing the MACAR for each of the metals listed in paragraph G.7.a. of this section, the lowest value computed shall be the MACAR to be provided in the release form pursuant to paragraph G.5.e. of this section.

7. a. Except as provided in paragraphs G.7.b. and G.7.c. of this section, no person who applies or uses compost on land within the State of Mississippi, other than for landfill cover, shall do so in a manner that exceeds the following maximum allowable metal application rates (MAMAR's):

<u>Metal</u>	<u>MAMAR (lbs/ac/yr)</u>
Cadmium	0.45
Copper	11.1
Lead	44.5
Nickel	11.1
Zinc	22.2

- b. For applications where repeated use of the compost is not

expected, such as land reclamation or as a soil amendment on highway right-of-ways, request for higher application rates may be made to the Department. Such request must be made in writing to the Department, stating the site upon which the compost will be used. The request must be approved in writing by the Department.

In no case will the Department allow an application rate of more than 10 times the MAMAR's listed in this part, except as provided in paragraph G.7.c of this section.

- c. If a person wishing to apply compost to the soil can demonstrate through an analysis of the soil cation exchange capacity and other physical or chemical characteristics of the soil that a higher MAMAR will provide an equal degree of protection to the environment, the Department may approve such application rates.