Pollution Control and Ecology Commission # 014.00-022
EXHIBIT C

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

REGULATION NO. 22

SOLID WASTE MANAGEMENT RULES

Approved by Arkansas Pollution Control and Ecology Commission on March 28, 2007

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Reg.22.101- Title

The following rules and regulations of the State of Arkansas, Pollution Control and Ecology Commission adopted pursuant to the Arkansas Solid Waste Management Act (Act 237 of 1971 as amended; Arkansas Code of 1987 Annotated § 8-6-201 et seq.), shall be known as Regulation Number 22 "Solid Waste Management" and referred to herein as Regulation 22.

Reg.22.102- Definitions

Unless otherwise noted, all terms contained in the regulations are defined by their plain meaning. This section contains definitions for terms that appear throughout these regulations; additional definitions may appear in the specific sections to which they apply. Except where noted otherwise, the term 'may' is permissive and the term 'shall' is a directive or requirement. When used in the regulations:

Active life means the period of operation beginning with the initial receipt of solid waste and ending at completion of closure activities, but not including the post closure care period.

Active portion means that part of a facility or unit that has received or is receiving wastes and has received only a six inch daily cover layer or a layer of approved alternative cover materials as required by Reg.22.413(a) and (b). The active portion does not include areas that have received the intermediate cover layer described in Reg.22.413(b) or that have been closed in accordance with the closure requirements of Reg.22.1301 of this regulation.

Airport means 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 ground water to wells or springs. Significant quantities of ground water shall be a defined as an adequate amount of water to conduct all required analytical tests.

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 unit, 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 fluction, block sliding, and rock fall.

Beneficial Fill means materials for use in filling low areas, improving drainage or stabilizing slopes or embankments. However, placement of beneficial types of fill material into a prepared hole may not be considered 'beneficial,' but may constitute unpermitted disposal. Projects that incorporate the use of beneficial fill material shall generally be completed within less than 60 days.

Beneficial fill material includes asphalt, brick, concrete, ceramics, and uncontaminated soil or dirt. Additional materials may be considered by the Director on a case-by-case basis prior to initiation of fill activity. Nothing in this section is to preclude the use of recovered materials as cited in Reg.22.103 (i) and (j).

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

Class 1 wastes means nonhazardous household, commercial, and industrial solid waste as defined herein; and small quantities of conditionally exempt hazardous wastes.

Class 3 wastes means nonhazardous commercial, industrial and special solid wastes that are permitted by the Department to be disposed of in a Class 3 landfill.

Class 4 wastes means nonhazardous, bulky, inert, nonputrescible solid wastes that do not degrade, or degrade very slowly and are permitted by the Department to be disposed of in a Class 4 landfill. Class 4 wastes include construction and demolition wastes, appliances, furniture, stumps, limbs and other bulky wastes that are not normally collected with other household, commercial or industrial waste.

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

Commission means the Pollution Control and Ecology Commission of the State of Arkansas.

Composting means the deliberate aerobic, biological decomposition of yard waste or other solid waste, resulting in a stable humus-like product.

Construction of permitted facilities or Construction shall refer to activities for which regulatory design and construction standards are provided herein. Clearing and grubbing, ingress and egress roadways, storm water facilities, office and garage buildings, scales, electrical and water utilities, purchasing of rolling equipment, and site monitoring wells are not considered as construction of permitted landfill disposal facilities. However, the construction of the items listed above shall have no bearing on the approval or disapproval of an application, nor shall the construction activities relieve the applicant from meeting any design or construction requirements. The Initiation of Construction of permitted landfill disposal facilities does refer to the construction of clay liner system or composite liner system, leachate control and management systems.

The Initiation of Construction of other types of permitted solid waste management or processing facilities shall refer to any activities including and following the construction of footings or foundation.

Construction and Demolition (C&D) waste means any and all material and debris that might result from the construction or demolition of any building or other manmade structure including but not limited to single and multi family dwellings, commercial buildings, road and highway construction and repair, remodeling and additions to existing structures and roofing. Materials may include (but are not limited to) dimensional lumber, roofing materials, bricks, concrete blocks, siding, gypsum (drywall), masonry, metal, cardboard, concrete with and without rebar, fill materials (including earth, gravel and stone), glass, and any other material that may be used in any construction project or may be salvaged from any demolition project.

Construction and Demolition Recycling Facility (C&DRF) means a facility that provides for the extraction from mixed construction and demolition waste of recoverable materials..

Construction Quality Assurance refers to the means and actions used to assure conformity of the liner and cover system component production and installation to the approved Construction Quality Assurance Plan.

Construction Quality Control means those actions taken by manufacturers, fabricators, and/or installers to ensure that materials and workmanship meet the requirements of the approved Construction Quality Assurance Plan.

Contaminated soils means those soils that have been physically, chemically, or biologically altered from their natural state. As used in this regulation, a soil is contaminated if it has come into contact and/or mixed with some other substance such that the soil or substance and soil mixture is a threat to human health or the environment, and requires remediation, treatment, or disposal in accordance with these regulations to mitigate such threats.

Department means the Department of Environmental Quality of the State of Arkansas, or its successor, including the Director and Department Staff.

Destruction or adverse modification means a direct or indirect alteration of critical habitat that appreciably diminishes the likelihood of the survival and recovery of threatened or endangered species using that habitat.

Director means the Director of the Department of Environmental Quality or the Director's designee.

Director of an approved state means the chief administrative officer of a State agency responsible for implementing the State municipal solid waste permit program or other system of prior approval that is deemed to be adequate by EPA under regulations published pursuant to section 4005 of RCRA. "Director," the "State Director" and "Director of an approved State" shall have the same meaning.

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

Design Narrative means that portion of the narrative that describes the design of the solid waste management facility.

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

Disposal means abandoning, depositing, releasing, 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.

Disposal site or Disposal facility means any place at which solid waste is dumped, abandoned, or accepted or disposed of for final disposition by incineration, landfilling or any other method. The operations of wastewater treatment facilities permitted under the National Pollutant Discharge Elimination System (NPDES), Underground Injection Control (UIC) program and hazardous waste management facilities permitted under the Arkansas Hazardous Waste Management Act (A.C.A. § 8-7-201 et seq.) shall not be deemed to be disposal sites or facilities for the purposes of this Regulation.

Endangered or threatened species means any species listed as such pursuant to Section 4 of the Endangered Species Act.

Existing municipal solid waste landfill unit means any municipal solid waste landfill unit that is receiving solid waste as of the appropriate compliance dates specified in Reg.22.103(f). 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 disposal, treatment or processing 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.

Gas condensate means the liquid generated as a result of gas recovery processes at the landfill.

General Permit means a single common permit issued by the Department following public notice and comment for a class of solid waste processing facility owners and operators. Eligible owners and operators may construct and operate under the terms of the general permit without obtaining an individual permit.

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

Hauler means a person engaged in the collection or transportation of solid waste for disposal, transfer or storage. Hauler does not include a person transporting non-commercial waste to a permitted facility.

Hazardous waste means a hazardous waste as defined by Regulation Number 23 of the Pollution Control and Ecology Commission.

Hazardous waste generated by conditionally exempt small quantity generators means waste generated by persons meeting the criteria set forth at 40 CFR 261.5 as incorporated by reference in Regulation Number 23 of the Pollution Control and Ecology Commission, or such lesser volumes as are identified by state regulations that are in effect at the time of generation or storage of such waste.

Herbicide and pesticide container means a spent container that has contained (a) any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pests, (b) any substance or mixture of substances intended for use as a plant regulator, defoliant, desiccant, and (c) any substance or mixture of substances intended to be used as a spray adjuvant and not controlled by the Arkansas Hazardous Waste Management Act [A.C.A. § 8-7-201 et seq.] and Regulation Number 23 of the Pollution Control and Ecology Commission.

Highly toxic pesticide container means a spent container that has contained any pesticide determined to be a highly toxic pesticide that under the authority of Section 25 (a)(2) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) the Arkansas Hazardous Waste Management Act (A.C.A. § 8-7-201 et seq.) and Regulation Number 23 of the Pollution Control and Ecology Commission.

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 ash means any tangible residue resulting from the incineration of solid waste.

Individual permit means a permit issued by the Director to a person as defined herein for the construction of a solid waste disposal or processing facility pursuant to the requirements of Regulation 22.

Industrial solid waste means solid waste generated as a result of manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of RCRA or as defined by Regulation Number 23, Sections 260.10 and 261.3, of the Pollution Control and Ecology Commission. Such waste may include, but is not limited to, waste resulting from the following manufacturing or industrial 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.

Infectious waste means laboratory wastes, including pathological specimens (i.e., all tissues, specimens of blood elements, excreta and secretions obtained from patients and laboratory animals) and disposal fomites (any substance which may harbor or transmit pathogenic organisms) attendant thereto. It also means surgical operating room pathologic specimens and disposal fomites attendant thereto and similar disposal materials from out-patient areas and emergency rooms, including equipment, instruments, utensils and fomites of a disposal nature from the rooms of patients who are suspected to have or have been diagnosed as having a communicable disease and must, therefore, be isolated, as required by public health agencies.

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 terranes include, but are not limited to, sinkholes, sinking streams, caves, large springs, and blind valleys.

Land application unit means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for agricultural purposes or for treatment and disposal.

Landfill or landfill unit means a discrete area of land or an excavation that is permitted by the Department under these regulations and receives solid waste for disposal, and that is not a land application unit, surface impoundment, injection well or waste pile, as those terms are defined under 40 CFR 257.2.

Lateral expansion means a horizontal expansion of the waste boundaries of an existing municipal solid waste landfill unit.

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

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 surface.

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).

Material Recycling Facility or MRF means a facility engaged solely in practices related to the management or diversion of source separated recoverable materials from the waste stream including storage, processing, marketing or reuse of recovered materials. Such term shall not include a solid waste recovery or

handling facility provided; however, that any solid waste generated by such facility shall be subject to all applicable laws and regulations relating to such solid waste.

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.

Medical waste means a waste from health care related facilities which if improperly treated, handled or disposed of may serve to transmit an infectious disease(s) and as further defined by A.C.A. § 20-32-101 et seq.

Monofill means a separately permitted landfill or landfill unit specifically designed and operated for the sole disposal of incinerator ash, sludge, tires, or other wastes where only a single type of waste is placed in the landfill unit.

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

Municipality means a city of the first class or city of the second class or an incorporated town.

Narrative means the document or documents provided with the permit application that includes all written documentation required by the Department to evaluate the proposed design, construction, and operation of the solid waste management facility.

New municipal solid waste landfill unit means any municipal solid waste landfill unit that has not received waste prior to the compliance dates specified in Reg.22.103(f).

One hundred (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 equaled or exceeded once in 100 years on the average over a significantly long period.

Open dump means a site that has been used for the disposal of solid waste which is not a permitted solid waste disposal facility.

Open burning means the combustion of solid waste without:

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.

Operating Plan and Narrative means that portion of the narrative that describes the operating procedures of the solid waste management facility.

Operator means, for the purposes of this regulation, the person(s) responsible for the overall operation of a solid waste management facility or part of a facility. This definition shall not be construed to have the same meaning as a solid waste facility operator as defined and used in Regulation Number 27, Licensing of Operators of Solid Waste Management Facilities and Illegal Dumps Control Officers.

Owner means the person(s) who owns a solid waste management facility or part of a facility.

Person means any individual, corporation, company, firm, partnership, association, trust, state agency, government instrumentality or agency, institution, county, city, town or municipal authority or trust, venture or other legal entity, however organized.

Petroleum contaminated soils means those soils which have been physically, chemically or biologically altered by gasoline, diesel, kerosene, heating oil, jet fuel or any other petroleum product.

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 unit.

Potentiometric surface means the surface to which water in an aquifer would rise by hydrostatic pressure.

Practices means the act or method of managing of solid waste.

Process Waste means solid waste resulting from an industrial or manufacturing processing operation.

Putrescible wastes means solid waste which contains organic matter capable of being decomposed by microorganisms and of such a character and proportion as to be capable of attracting or providing food for birds and other potential disease vectors.

Recovered Materials includes but is not limited to metal, paper, glass, plastic, textile, yard trimmings, or rubber materials that have known recycling potential, can be feasibly recycled, and have been diverted and source separated or have been removed from the solid waste stream for sale, use, or reuse as raw materials, whether or not the materials require subsequent processing or separation from each other, but does not include materials destined for any use that constitutes disposal. Recovered materials as described above are not solid waste for purposes of this regulation.

Recycling means the systematic collection, sorting, decontaminating, and returning of waste materials to commerce as commodities for use or exchange by separating or diverting an item or items from the solid waste stream for the purpose of processing it or causing it to be processed into a material product, including compost, in order to provide for the final disposition of the material product in a manner other than landfilling or incineration.

Regional Solid Waste Management Board means a Regional Solid Waste Management Board formed under A.C.A. §8-6-701 et seq.

Regional Solid Waste Management District means a Regional Solid Waste Management District formed under A.C.A. § 8-6-701 et seq.

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.

Safety means practices designed to reduce or prevent injury or damage to the public or to the environment.

Salvage means the approved, controlled removal of reusable material, but shall exclude food products and all other putrescible wastes.

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

Scavenging means the manual sorting and/or recovery of materials from the waste stream, either in the trucks, at the face of the fill, or in unconfined truck discharge areas by individuals not employed or associated with the landfill operation.

Seismic impact zone means an area with a two percent (2%) or greater probability that the maximum horizontal acceleration in lithified earth material, expressed as a percentage of the earth's gravitational pull will exceed 0.10g in fifty (50) years.

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 boundary means the outermost perimeter of the solid waste (projected in the horizontal plane) as it would exist at completion of the disposal activity.

Solid waste management plan means a plan developed according to the provisions of the Solid Waste Management Act, A.C.A. §8-6-201 et seq., and guidelines of the Department, and which is subject to approval by the Department.

Solid waste management system means the entire process of storage, collection, transportation, processing, treatment, and disposal of solid waste, and includes equipment, facilities and operations designed for solid waste management activities, including recycling, source reduction, and the enforcement of solid waste management laws and ordinances.

Solid waste recovery facility (WRF) means a solid waste handling facility that provides for the extraction from mixed solid waste of recoverable materials, materials suitable for use as a fuel or soil amendment, or any combination of such materials. Due to the similiarity of functions, WRF operations are required to meet all permitting requirements for transfer stations, including obtaining a certificate of need from the Regional Solid Waste Management District.

Solid waste processing facility means a composting facility, transfer station, solid waste recovery facility or other facility that handles or processes solid waste.

Source separated recovered materials means the recovered materials that have been separated from the solid waste stream at the point of generation or at a solid waste materials recovery facility. The term does not require that various types of recovered materials be separated from each other and recognizes de minimis solid waste, in accordance with industry standards and practices, may be included in the recovered materials.

Special materials means any materials that require special handling precautions and disposal procedures by the landfill owner or operator beyond the normal activities associated with landfill operations. Special materials includes those items listed in Chapter 7 of this Regulation and other process wastes and conditionally exempt small quantity generator wastes requiring special handling procedures.

State means the State of Arkansas.

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

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

Taking of endangered species means harassing, harming, pursuing, hunting, wounding, killing, trapping, capturing, or collecting of an endangered species or attempting to engage in such conduct.

Transfer station means any facility used to manage the removal, segregation, processing, and transfer of solid waste from collection vehicles and containers, and from other private and commercial vehicles to greater capacity transport vehicles.

Type O Compost Material means source separated organic wastes, such as paper, food wastes, food-processing wastes, or yard waste or municipal sewage sludge in combination with these wastes.

Type S Compost Material means mixed solid wastes such as household garbage, nonhazardous commercial wastes, or yard waste, source separated organic wastes, or sewage sludge in combination with these wastes.

Type Y Compost Material means yard waste and other vegetative materials such as grass clippings, leaves, and shredded or chipped brush, and tree prunings.

Unauthorized Waste means regulated hazardous wastes as defined in 40 CFR Part 261, polychlorinated biphenyls (PCB) wastes regulated under the Toxic Substances Control Act (TSCA) for disposal as defined in 40 CFR Part 761, and all other wastes which are not allowed for disposal due to the provisions of this regulation, specific permit conditions, or not allowed by Arkansas law.

Underground drinking water source means an aquifer supplying drinking water for human consumption, or an aquifer in which the ground water contains less than 10,000 mg/l total dissolved solids.

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 terranes.

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.

Vector shall have the same meaning as "Disease vector".

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 down gradient limit of the unit. This vertical surface extends down into the uppermost aquifer.

Waste pile or Pile means any noncontainerized accumulation of solid, nonflowing, waste that is used for treatment or storage.

Water table means the surface of unconfined water at which pressure is atmospheric and is defined by the levels at which water stands in wells that penetrate the ground water surface.

Wetlands means those areas of land that are defined in 40 CFR 232.2(r).

Yard waste means grass clippings, leaves, and shrubbery trimmings.

Reg.22.103- Purpose, Scope, And Applicability

(a) Purpose - The purpose of these regulations is to establish standards and criteria for location restrictions; permit application procedures; design, operations, and maintenance; financial assurance; ground water monitoring and corrective action; and closure and post-closure care for all solid waste disposal and management facilities to ensure the protection of human health and the environment.

(b) Scope - These regulations are based on the provisions of Arkansas law cited in Reg.22.201 and upon Title 40 Code of Federal Regulations (CFR) Part 257 and Part 258andthe Arkansas Solid Waste Management Act (ACA 8-6-201 et seq.) as amended. The Part 258 regulations were promulgated under authority of Subtitle D of the Resource Conservation and Recovery Act (RCRA) and are thus commonly referred to as "Subtitle D Criteria" or "Subtitle D." Regulations contained herein for all other solid waste disposal facilities not regulated under Subtitle D of RCRA are based upon criteria contained in 40 CFR Part 257.

(c) Applicability - These regulations apply to owners or operators of all solid waste disposal or processing facilities, except as specifically provided, including but not limited to the following permit categories, each of which requires either a separate individual permit or coverage under a general permit:

(1) Class 1 facilities are landfills built to RCRA Subtitle D standards, as incorporated herein for the acceptance of all nonhazardous wastes.

(2) Class 2 [Reserved]

(3) Class 3 NonCommercial (3N) facilities are landfills that accept for disposal nonhazardous industrial and commercial wastes generated by the permittee and do not accept waste for disposal from any other source.

(4) Class 3 Commercial (3C) facilities are landfills that accept for disposal only authorized nonhazardous industrial and commercial wastes generated by the permittee or from other approved facility locations or sources.

(5) Class 3 Tire (3T) facilities are tire monofills that accept only processed tires or whole baled tires for disposal.

(6) Class 4 facilities are landfills for the commercial disposal of inert nonputrescible Class 4 wastes as defined herein.

(7) Composting Facilities (CY) are facilities that accept only vegetative grass, brush and tree yard wastes.

(8) Composting Facilities (CO) are facilities that accept type Y wastes and approved organic wastes.

(9) Composting Facilities (CS) are facilities that accept type Y wastes and approved solid wastes.

(10) Transfer Stations (TS) are facilities that manage the bulking of solid waste for transportation to a point of disposal.

(11) Solid Waste Recovery Facilities (WRF) are facilities that segregate, recover, or otherwise process recyclable materials from Class 4 types of waste streams.

(d) General Effective Date – Unless other wise specified in these regulations, compliance is required on the effective date of the regulations.

(e) Class 1 Landfill Compliance Exemption – Class 1 landfills that received waste after October 9, 1991 but stopped receiving waste before the compliance date specified in Reg.22.103(f) are exempt from the requirements of this regulation except for the closure and post closure care requirements of Chapter 13. The final landfill cover required under Chapter 13 must be installed by October 9, 1994. Owners or operators that fail to complete cover installation by October 9, 1994 will be subject to all of the requirements of this regulation unless otherwise specified.

(f) Compliance Date for Class 1 Landfills – The compliance date for Class 1 landfils for all requirements of this regulation, unless otherwise specified is:

(1) October 9, 1993 for all municipal solid waste landfill units that received waste on of after October 9, 1993 except those that qualify for an extension as described below, or

(2) April 9, 1994 for an existing municipal solid waste landfill unit or a lateral expansion of an existing municipal solid waste landfill unit that meets the following conditions:

(i) The municipal solid waste landfill unit disposed of less than 100 tons per day (TPD) or less of solid waste during a representative period prior to October 9, 1993;

(ii) The unit did not dispose of more than an average of 100 TPD of solid waste each month between October 9, 1993 and April 9, 1994; and

(iii) The municipal solid waste landfill unit is not on the National Priorities List (NPL) as found in Appendix B to 40 CFR Part 300.

(g) General Permits for Solid Waste Processing Facilities - The Department may develop and issue general permits for any categories of solid waste processing facilities. To qualify for inclusion under a general permit, applicants shall be required to submit a notice of intent and supporting documentation. Facilities and practices not qualifying for inclusion under the conditions of a general permit shall be required to obtain individual permits.

(h) Facilities Classified as Open Dumps - Municipal solid waste landfill units and other solid waste facilities and practices failing to satisfy the criteria established in these regulations are considered open dumps for purposes of this regulation and State solid waste management planning under RCRA and are prohibited under Section 4005 of RCRA. As provided in 40 CFR 258.1 municipal solid waste landfill units containing sewage sludge and failing to satisfy the criteria established in these regulations violate sections 309 and 405(e) of the Clean Water Act.

(i) Use of Recovered Materials - Provided that the Department may rescind this authorization based on environmental, public health or other factors, the use of recovered materials as defined in Reg.22.102, whether the recovered material is directly reused, used in a manufacturing process, used as a construction material, or is inert material used as beneficial fill material, shall not constitute the disposal of solid waste for purposes of this regulation provided that such use of recovered materials will not result in adverse impacts to the air or surface and ground water quality.

(j) Approval may not be required for the use of recovered materials except that the Director may impose conditions on the use and re-use of materials otherwise classified as solid waste on a case-by-case basis to assure protection of air, or surface and ground water quality.

(k) Adoption of Subsequent Federal Regulations - The Director, after the date of promulgation of any new or revised federal solid waste disposal facility regulations, shall conduct rulemaking procedures with reference to these regulations as necessary to maintain a State Solid Waste Management Program equivalent to the federal program. Such new or revised federal regulations, upon the date of their publication as final rules of the U.S. Environmental Protection Agency shall constitute minimum guidelines to the Director in formulating rule making proposals to these regulations, and shall not be construed to limit or interfere with the adoption of provisions more stringent than federal regulations subject to the provisions of ACA § 8-1-203.

(l) Contaminated Soil Remediation Exclusion - The provisions of these regulations shall not apply to the on-site disposal or on-site placement of contaminated soils if:

(1) The activities in question are part of an environmental remediation effort being conducted pursuant to an approved written plan or order submitted to or issued by the Department; and

(2) The activities are carried out wholly within the boundaries of the site that is the subject of the remediation; provided, however, that for purposes of satisfying the conditions of this subsection, use of private or public streets, roads, or drives to transport such soils from one part of a site to another part of the same site shall not be considered off-site activities, so long as the transportation is in accordance or consistent with the written plan or order

Chapter 2 Regional And Local Solid Waste Management Systems

Reg.22.201- Regional Solid Waste Management Boards

(a) District Boundaries - In accordance with A.C.A. §8-6-701 et seq. and except as provided A.C.A. § 8-6-723, the boundaries of regional solid waste management districts shall be approved by the Commission.

(b) Solid Waste Management System- Each regional solid waste management board shall develop a regional solid waste management system plan to provide for a solid waste management system within the district. The plan shall be submitted to the Department for approval.

Reg.22.202 - Licensing Haulers Of Solid Waste

(a) Applicability - A person who engages in the business of hauling solid waste must obtain a license from the Regional Solid Waste Management Board or Boards having jurisdiction if:

(1) the person is engaged in the collection of solid waste within the district; or

(2) is engaged in the transportation of solid waste for disposal or storage in the district.

(b) Exemptions from Licensing - Persons exempt from licensing shall comply with all other applicable standards required under this section or by District rules adopted pursuant to this section. For purpose of this section, a license shall not be required for:

(1) An individual hauling only their own household waste to a permitted facility;

(2) The transport of solid waste from an industrial facility to its own Class 3N landfill; or for

(3) A Solid Waste Management District engaged in the hauling of solid waste within its own district.

(c) Issuance of a License - A license shall be issued only to a person, partnership, corporation, association, the State of Arkansas, a political subdivision of the state, an improvement district, a sanitation authority, or another regional solid waste management district.

(d) Hauler Classifications - The following classification of haulers shall apply:

(1) A Type I hauler hauls all categories of nonhazardous solid waste as identified in Regulation 22 with the exception of waste tires;

(2) A Type II hauler hauls only process waste and special materials as identified in Regulation 22, with the exception of waste tires

(e) Financial Assurance - Any hauler applying for a license must establish financial responsibility to the Board. Proof of liability insurance will be required and may be considered adequate financial responsibility.

(f) Licensing Standards - For purposes of this section the following licensing standards and classifications apply. Any person who transports wastes shall:

(1) Hold the appropriate driver's license as defined by Arkansas Law;

(2) Register the operation with the Regional Solid Waste Management Board providing:

(i) Name, address, and telephone number of registrant

(ii) Description of vehicle to be registered including:

a) Make, model, and year of vehicle;

b) Vehicle ID number;

c) License plate number;

d) Name of vehicle owner; and a Description of the nature of wastes and size of loads.

(g) Hauler Requirements - All collection systems and collection equipment shall meet the following conditions:

(1) Solid waste shall be collected and transported so as to prevent public health hazards, environmental h azards, safety hazards and nuisances, and shall be kept in a sanitary condition.

(2) Collection and transportation equipment shall be designed and constructed so as to be leak-proof. The waste shall be suitably enclosed or covered so as to prevent roadside littering, attraction of vectors or creation of other nuisances.

(h) Adoption of More Restrictive Standards - The Regional Solid Waste Management Boards may impose more stringent standards than these minimum standards established by the Commission.

(i) Licensing Fees and Rules - The Regional Solid Waste Management Board may set a reasonable licensing fee for each type of hauler and may establish licensing requirements based on size of the haulers' transport vehicle(s)

Reg.22.203 - Local Authority Approval Of Site Selection And Expansion

(a) Applicability - This Section applies to all new permitted facilities including landfills and solid waste processing facilities and to the expansion of the permitted acreage of landfills and solid waste processing facilities.

(b) Conformance with County-Wide Plans - If the proposed solid waste facility site is located within a municipality or county that has adopted restrictions on sites in conjunction with a comprehensive county-wide land use plan, specific geographic site approval from the government(s) of jurisdiction shall be obtained by the applicant for submission to the Department with the pre-application.

(c) Conformance with Regional Standards and Rules - If the proposed solid waste facility site is located within a regional solid waste management district which has adopted restrictions on sites, specific geographic site approval from the regional solid waste management board of jurisdiction shall be obtained by the applicant for submission to the Department with the pre-application.

(d) Conformance with Other Requirements - As applicable, applicants shall also meet the requirements of Reg.22.204 regarding high-impact solid waste facilities and Reg.22.205 regarding certificate of need for landfills.

(e) Written Approval or Denial - Any approval or denial by local governments or regional solid waste management boards of solid waste site selection shall be in writing and shall state the basis for the approval or denial with reference to the specific requirements of the local jurisdiction and this regulation.

(f) Notification of Local and Regional Authorities - If the proposed site is located in a municipality or county that has not adopted restrictions on sites in conjunction with a county-wide comprehensive land use plan or in a solid waste management district that has not adopted site restrictions, the applicant shall notify the municipality and county of jurisdiction over the proposed site and the solid waste management board by certified mail prior to submission of the pre-application. Except as may be required in Reg.22.204 and Reg.22.205 for landfills, no specific geographic site approval by the local government entity or regional solid waste management board is required.

Reg.22.204 - Host Community Approval Of Site Selection

(a) Applicability and Scope - In accordance with A.C.A. § 8-6-1501 et seq., a rebuttable presumption exists against permitting the construction or operation of any new landfill within twelve miles of any existing high-impact solid waste facility. This presumption may be overcome if any of the following is shown:

(1) No other suitable site for such a facility is available within the region or service area because of the constraints of geology or any other factors listed in Reg.22.205(b); or

(2) Incentives have prompted the host community to accept the siting of the facility. Such incentives may include, without limitation:

(i) Increased employment opportunities;

(ii) Reasonable host fees not to exceed the prevailing state average;

(iii) Contributions by the facility to the community infrastructure (e.g. road maintenance, park development, litter control);

(iv) Compensation to adjacent individual landowners for any assessed decrease in property values; or

(v) Subsidization of community services.

(b) Definitions - For purposes of this section, the following definitions shall apply:

(1) "High-impact solid waste management facility" shall mean, excluding the facilities described in subsection (2), any open or closed solid waste landfill, any operating solid or commercial hazardous waste incinerator and hazardous waste treatment or storage facility, and any open or closed commercial hazardous waste disposal facility.

(2) The term "high-impact solid waste management facility" shall not include the following:

(i) Recycling or composting facilities;

(ii) Waste tire management sites;

(iii) Solid waste transfer stations;

(iv) Solid waste landfills which had pre-applications or applications pending for either increased capacity or new acreage as of the August 13, 1993;

(v) A facility dedicated solely to the treatment, storage or disposal of solid or hazardous wastes generated by a private industry where the private industry bears the expense of operating and maintaining the facility solely for the disposal of waste generated by the industry or wastes of a similar kind or character; or

(vi) A facility or activity dedicated solely to a response action at a location listed by the state or federal government as a hazardous substance site; or

(vii) An existing facility operating under interim status of the Federal Resource Conservation and Recovery Act or implementing regulations of the Arkansas Hazardous Waste Management Act or the Arkansas Hazardous Waste Management Code.

(viii) Expansion of existing Resource Conservation and Recovery Act Subtitle C or Arkansas Hazardous Waste Management Act hazardous waste facilities, either through increased acreage or provision for additional services or increased capacity.

(3) "Host Community" shall mean the closest governmental unit as measured along major facility access roads and highways exercising zoning authority encompassed within a twelve-mile radius of the site of the proposed high-impact solid waste management facility.

(c) Department Action and Compliance Requirements - The Department shall not process any pre-application for a new or increased landfill acreage, or an application for increased landfill capacity until definitive findings in conformance with this section have been provided by the host community and accepted by the Department. Acceptance or denial of landfill siting by the host community shall be by formal resolution of the governing body of the host community.

Reg.22.205- Certificate Of Need For Landfills and Transfer Stations

(a) Applicability - All applicants for a new solid waste landfill permit, new transfer station permit; or for an expansion of the permitted capacity of an existing landfill, except for permits for Class 3N Noncommercial landfills, must obtain a certificate of need from the regional board with jurisdiction over the proposed site.

(b) Petition Requirements - The petition to the regional board must be in accordance with procedures adopted by the board but must establish, at a minimum, that the proposed disposal facility:

(1) Is consistent with the regional planning strategy adopted by the board in the regional needs assessment or the regional solid waste management plan;

(2) Does not conflict with existing comprehensive land-use plans of any local governmental entities;

(3) Does not disturb an archaeological site as recognized by the Arkansas Historic Preservation Progam, or a rare and endangered species habitat as recognized by the Arkansas State Game and Fish Commission or the United States Fish and Wildlife Service;

(4) Will not adversely affect the public use of any local, state, or federal facility, including, but not limited to, parks and wildlife management areas;

(5) Does not conflict with the requirements of local, state or federal laws and regulations on the location of disposal facilities as outlined in this regulation.

(c) Petition Evaluation - The regional board shall provide for public notice and comment and for one or more public hearings in the county in which the proposed facility is to be located. The board shall issue or deny the certificate of need based upon an evaluation of:

(1) The information provided by the applicant in the petition for a certificate of need;

(2) The requirements and considerations of any needs assessments prepared pursuant to this section;

(3) The location of the applicant's proposed facility based on the district's needs and its highway and road system;

(4) The need for a landfill application based upon the district's remaining capacity that is currently permitted for operation, but in no event shall the district's remaining permitted capacity exceed thirty (30) years unless the city or county government within whose jurisdiction the proposed landfill is located authorizes approval of the excess capacity through the adoption of a resolution. Along with the Certificate of Need for a landfill, the district shall provide to the Director an allocation of waste capacity for each permitted landfill within the district's jurisdiction in order to determine the design capacity of the proposed facility;

(5) Any solid waste management system plans, promulgated and approved pursuant to A.C.A. § 8-6-211 and § 8-6-212 to the extent these plans conform to an overall regional planning strategy;

(6) A detailed history of the applicant's record and that of the stockholders and officers with respect to violations of environmental laws and regulations of the United States or any state or any political subdivision of any state; and

(7) Any procedures adopted by the board for issuance of Certificate of Need.

(d) Appeals - Any interested person as defined in Reg.22.206(b)(1) may appeal the board's determination to the Director pursuant to appeal procedures set forth in Reg.22.206. The Director may grant or deny a permit if the Director finds, upon appeal, that the decision of the board was not supported by substantial evidence considering the factors outlined in this section.

Reg.22.206- Appeal Of Certificate Of Need Determination

(a) Purpose and Intent - A.C.A. §8-6-706(a) requires certain applicants for a solid waste landfill permit and transfer station permit to obtain a certificate of need from the solid waste management district board with jurisdiction over the proposed site. A.C.A. §8-6-706(c) provides for an appeal by any interested party of a certificate of need decision to the Director, pursuant to procedures adopted by the Commission. It is the intent of the Commission by this rulemaking to promulgate the procedures to be used for such an appeal.

(b) Filing an Appeal

(1) Any person with standing to appeal a certificate of need determination by a board may appeal the board's determination to the Director by serving the appeal on the Director by certified mail. The appeal must be received by the Director no later than thirty (30) days after the date of issuance of the board's written determination. Persons with standing to appeal the determination shall be only the applicant or permittee and those persons who submitted written or oral public comments for the record during the comment period designated by the District.

(2) The appeal may be in the form of a pleading or a letter and shall contain:

(i) A copy of the board's written determination;

(ii) The date of the board's determination;

(iii) The factual and legal grounds that form the basis for the appeal;

(iv) Copies of all exhibits and other supporting documents; and

(v) A certificate of service showing that the appeal has been served upon the board in accordance with Paragraph (b)(3).

(3) The party must serve, by certified mail, return receipt requested, a copy of the appeal and all exhibits and other supporting documents upon the board making the determination.

(c) Response by Board

(1) Any board served with an appeal under Reg.22.206 (b) may file a written response to the appeal with the Director. The response must be received by the Director no later than thirty (30) days after the date the board received the appeal.

(2) The response shall contain a reply to each of the grounds for appeal and shall contain any supporting evidence.

(d) Hearing by Director

(1) The Director may issue a decision after reviewing the submissions by the parties. If, however, after reviewing the submissions the Director determines that a hearing on the matter is necessary, he shall issue a Notice of Hearing to the party filing the appeal and to the board whose determination is being appealed, designating the time and place of the hearing. No such hearing shall be scheduled until after a response has been filed by the board pursuant to Part III or after the time for filing a response has elapsed, whichever comes first.

(2) The Director or his designee shall preside over any hearing held pursuant to this Section.

(e) Director's Decision

(1) After considering all relevant evidence presented in the appeal, the Director shall determine whether the decision of the board is supported by substantial evidence. His decision shall be based upon the factors set out in A.C.A. §8-6-706 and upon any other relevant factors.

(2) The Director shall issue his decision in writing and shall serve a copy of the decision upon the party filing the appeal and upon the board. The parties involved in the appeal of the district board decision, may request Commission review of the Director's decision. Except that the parties with standing shall be the parties to the appeal of the district board decision, the appeal to the Commission shall be conducted in the form and manner in accordance with the requirements of Regulation 8, Part 2.5 Practice and Procedure, for adjudicatory hearings before the Commission.

Chapter 3 Permit Applications Procedures

Reg.22.301- General Provisions

(a) Applicability - This Chapter applies to all solid waste disposal, collection and processing facilities except as identified herein. Application and permitting procedures shall conform to Regulation Number 8 of the Commission and the supplemental provisions of this Chapter. Except for any supplemental provisions, Regulation No. 8 shall govern in the event of any conflict with this Chapter.

(b) Authority - Act 237 of the 1971 Arkansas General Assembly, as amended, makes it unlawful to construct, install, alter, modify, use or operate any solid waste disposal or processing facility or site without a permit from the Department.

(c) Construction - Construction of solid waste disposal or processing facilities shall not commence until a final permit for construction and operation has been issued. Bid documents prepared for construction shall conform to approved permit plans and specifications and shall be submitted to the Department upon request. Changes made during construction that will materially impact the facility design shall be submitted to the Department for approval.

(d) Operations - Operations at a solid waste disposal or processing facility shall not commence until the fully completed facilities have been inspected and written authorization is provided by the Director. The permittee shall provide a ten (10) day minimum written notice to the Department prior to the intended start-up date for the waste disposal or processing facility.

(e) Environmental Compliance Record - In accordance with A.C.A. § 8-1-106 and any regulation promulgated pursuant thereto, the Director may deny the issuance or transfer of any permit, license, certification, or operational authority if he finds, based upon the disclosure statement and other investigation which he deems appropriate, that

(1) The applicant has a history of noncompliance with environmental laws or regulations of this state or any jurisdiction;

(2) An applicant which owns or operates other facilities in the state is not in substantial compliance with environmental laws or regulations of this state; or

(3) A person with a history of noncompliance with environmental laws or regulations of this state or any jurisdiction is affiliated with the applicant to the extent of being capable of significantly influencing the practices or operations of the applicant which could have an effect on the environment.

(f) Application and Supporting Documents - All construction and operating information contained in the permit application and any changes, modifications, or alterations in the permit application submitted to the Department in writing, and agreed to in writing by the Department shall become an integral part of the permit.

(g) Confidentiality - Each permit application shall be available for public inspection, provided, however, that the Department shall not disclose, except to authorized persons, any information which the Director determines is entitled by law to protection as trade secrets without the consent of the applicant. Trade secrets shall not include the name and address of the applicant, nor any

information necessary, as determined by the Director, for the public to evaluate the hazards associated with the proposed operation, nor any other information required by law to be available to the public.

(h) Signature on Applications - Wherever possible or applicable, applications shall be signed by the person applying for the permit. Where another person signs on behalf of the applicant, the title or relationship shall be provided on the application form. The Department shall require a person signing an application on behalf of an applicant to provide written proof of authorization.

(1) Corporations - An application submitted by a corporation shall be signed by a responsible corporate officer. For purposes of this section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation; or

(ii) the manager of one or more manufacturing, production, or operating facilities, if authority to sign documents has been delegated to the managers in accordance with corporate procedures.

(2) Partnerships and Sole Proprietorships - In the case of a partnership or sole proprietorship, the application must be signed by a general partner or the proprietor, respectively.

(3) Publicly Owned Facilities - In the case of a municipal, state, federal, district or other public facility, the application must be signed by either a principal executive officer, ranking elected official, or other duly authorized employee.

(i) Professional Services Required - The services of a professional engineer registered in the State of Arkansas, and for Class 1, Class 3 and Class 4 landfills a professional geologist registered in the State of Arkansas, shall be retained by all applicants for disposal and processing permits; for the development of geotechnical and hydrogeologic studies, permit plans and specifications; and the preparation of an operating plan and narrative as described herein.

Reg.22.302- Pre-Application Procedures

(a) Pre-Applications Required - Prior to the preparation of detailed designs or extensive geologic investigations, applicants for new solid waste disposal permits and for lateral expansions to the currently permitted disposal area shall prepare and submit a pre-application.

(b) Pre-application Form and Documents - All pre-applications shall contain at least the following information and supporting documentation:

(1) The name and address of the applicant and the owner of the site or facility;

(2) The location of the proposed disposal or processing site including a description of access roads, streams which are in close proximity to the site, dwellings and any other relevant geographic and geologic features of the site. Pre-application for disposal facilities shall include data on soil conditions and general geologic features;

(3) A 7.5 minute USGS quadrangle map showing disposal or processing site boundaries. The processing facility must also be shown on an appropriate scale city or county map;

(4) Copies of notifications to appropriate agencies regarding whether the selected site is in conformance with the airport safety, floodplain, wetlands separation distances and location restrictions, and protective of endangered species, historic archaelogy, and flora and fauna. Those agencies include, but are not limited to, the Federal Aviation Administration, US Army Corps of Engineers, US Fish and Wildlife Services, Arkansas Game and Fish Commission, Arkansas Historic Preservation Program, Arkansas Natural Heritage Commission, and the Arkansas Department of Health.

(5) Assurance that the permit applicant has the legal authority to enter the lands for purposes of performing site investigations and studies;

(6) Declaration of the classification of landfill or type of processing area and proposed service area;

(7) A description of the nature and type of wastes to be disposed of or processed;

(8) Disclosure Statement (Not required for governmental entities including federal, state, county, municipal, regional solid waste authorities);

(9) Pre-application fee according to current fee schedule;

(10) Certificate of Need from Regional Solid Waste Planning Board in accordance with Reg.22.205, except that Class 3 Noncommercial landfills applicants shall instead provide a copy of the notice to the Regional Solid Waste Planning Board required in Reg.22.203;

(11) Site selection approval by or notice to the local government authority as required under Reg.22.203; and

(12) Additional information deemed necessary by the Department for performance of a preliminary site investigation.

(c) Public Meeting for Proposed Landfill Sites - The Department shall hold a public meeting at a suitable location near the proposed solid waste disposal site for all administratively complete pre-applications for new Class 1, Class 3 Commercial, and Class 4 landfills and public meetings may be required by the Department for other solid waste disposal and processing facilities, and permitting actions. The primary purpose of public meeting shall be to inform and answer questions from concerned citizens.

(d) Preparation of Notice of Public Meeting - Upon determination by the Department that a pre-application is administratively complete, a public meeting shall be scheduled by the Department. The Department shall prepare a public notice of the public meeting and furnish the notice to the applicant for publication in accordance with Reg. 22.305. A twenty (20) day minimum notice of the public meeting is required.

(e) Preliminary Site Investigation - A preliminary site investigation to gather geologic and geographic information shall be conducted by the Department to determine if the proposed landfill site appears suitable for waste disposal operations. Interested local, regional, state, and federal agencies may be invited by the Department to attend the preliminary site investigation.

(1) The applicant shall furnish all necessary equipment and manpower needed to gain access to the site, dig test pits and otherwise complete the preliminary site investigation.

(2) The Department shall provide its findings and results of the preliminary site investigation to the applicant. Should the applicant choose to submit a full application and detailed design for a landfill, any site limitations identified in the preliminary site investigation report shall be addressed in the application package.

(f) Response to Preliminary Site Investigation Report - Prior to the submittal of a full application for a permit, the applicant shall document how any limitations identified in the preliminary site investigation will be further investigated and how site limitations may be overcome in the facility design. The Director may make a decision to deny the permit based on location restrictions, the pre-application, the findings of the preliminary site investigation and preliminary geotechnical investigation report. Appeal of the Directors decision to deny the permit shall be in accordance with Regulation Number 8 of the Pollution Control and Ecology Commission, Administrative Procedures.

Reg.22.303- General Application Requirements

(a) Pre-application Conference - The Department may require the applicant to attend a pre-application conference to discuss application requirements and the findings of the preliminary site investigation.

(b) Submittal of Preliminary Geotechnical Report - Prior to completing a detailed facility design and submitting a full application for a disposal facility permit, the Department may require applicants for Class 1 and Class 3 landfills to submit a preliminary geotechnical investigation report. The report shall be in general conformance with the requirements of Chapter 11 and shall identify the proposed solid waste boundary of the facility in relation to such tests and investigations that have been made at the site and additional tests and investigations that are proposed to be made at the site. The results of the preliminary geotechnical report and preliminary site investigation shall be utilized in the facility design.

(c) Application Contents for Landfills - Applications for permits for the construction or operation of new or existing solid waste disposal facilities shall be submitted to the Department on forms prepared by the Department. All applications for solid waste disposal facilities shall contain at least the following information, either in the application form itself or in supporting documentation provided with the application:

(1) The name and mailing address of the applicant and the owner of the facility, and the physical address of the facility as denoted by the local 911 service;

(2) A description of the soil characteristics of the site from a physical investigation of the site;

(3) File marked copy of the legal instrument provided with the application giving right to use the realty for solid waste disposal or processing including a current boundary survey of the property by a registered land surveyor.

(4) Types, quantities, classifications and sources of waste proposed to be disposed of or processed at the site or facility;

(5) All proposed Class 1 and Class 3 landfills shall include a written program that will be utilized to monitor wastes to detect and prevent the disposal of hazardous wastes.

(6) Identification of the Special Materials identified in Chapter 6 proposed for acceptance at the facility;

(7) Predominant land use of the area in which the site or facility is located including identification of dwellings and wells within 2 miles of the site through visual inspection, review of historical records, and survey of surrounding residents;

(8) Total waste capacity, projected utilization rate, and total life expectancy of the facility;

(9) The proposed use of the site or facility upon termination of the disposal operation;

(10) Procedures and site improvements for prevention of unauthorized use of the site or facility;

(11) Application Fee in accordance with the current fee schedule;

(12) Permit Plans and Specifications;

(13) Operating Plan and Narrative;

(14) Design Narrative (including design calculations);

(15) Hydrogeologic Report;

(16) Ground Water Monitoring Plan;

(17) Detailed cost estimates for closure of the landfill units and for post closure care;

(18) Such additional information deemed necessary by the Department for a determination as to the issuance of the permit; and

(19) The additional and specific application requirements applicable to each class of solid waste disposal.

(20) A 7.5 minute USGS quadrangle map showing disposal or processing site boundaries. The processing facility must also be shown on an appropriate scale city or county map;

(21) A narrative description of the access roads and streams that are in close proximity of the site or facility;

(22) Documentation from appropriate agencies regarding whether the selected site is in conformance with the airport safety, floodplain, wetlands separation distances and location restrictions, and protective of endangered species, historic archaelogy, and flora and fauna. Those agencies include, but are not limited to, the Federal Aviation Administration, US Army Corps of Engineers, US Fish and Wildlife Services, Arkansas Game and Fish Commission, Arkansas Historic Preservation Program, Arkansas Natural Heritage Commission, and the Arkansas Department of Health.

(d) Application Contents for Solid Waste Processing Facilities - Application contents for Composting Facilities, Transfer Stations and Solid Waste Recovery Facilities shall conform to the requirements identified in the respective chapters covering those facilities.

(e) Other Regulations - In addition to the information set forth herein, an applicant shall, if the type of disposal site or facility is one for which a specific regulation has been promulgated, submit such additional information as is required by the specific regulation.

Reg.22.304- Permit Application Review

(a) Determination of an Administratively Complete Application - Upon submittal of an application for a solid waste disposal or processing application, the Department shall review the application and all supporting documents to determine if the application is administratively complete in accordance with Regulation Number 8.

(b) Return of Incomplete Applications - Applications for solid waste disposal or processing permits that have been deemed by the Department to be administratively incomplete shall be returned to the applicant along with notice of the determination. At the sole option of the Department, the application and supporting documentation may be retained pending additional submittals.

(c) Public Notice of Application - Upon determination by the Department that an application for a solid waste disposal or processing application is administratively complete (but not necessarily technically adequate), a public notice of the receipt of the application shall be prepared by the Department for publication by the applicant in accordance with Regulation Number 8.

(d) Technical Review of Application - Following a determination that the application is administratively complete, the Department shall perform a review of the application for technical adequacy and regulatory conformance. The applicant shall be notified in writing of any apparent or actual deficiencies. Any deficiencies in the application form or supporting documents must be corrected, revised or otherwise answered by the applicant in writing. Failure of the applicant to satisfactorily respond to any written deficiencies after being given reasonable opportunity to respond completely shall constitute grounds for the denial of the permit. Appeal of the Directors decision to deny the permit shall be in accordance with Regulation Number 8, Administrative Procedures.

(e) Preliminary Permit Decision - Upon review of the final application package, the Director will make a preliminary decision to deny or grant a permit for solid waste disposal or processing. Notice of the decision shall be distributed and published in accordance with Regulation Number 8.

Reg.22.305- Public Hearings And Notices

(a) Payment for Public Notices - The applicant shall publish, at applicant expense, the public notices required herein or by law to be published by the applicant. The notices shall be identified in the publication as legal notices and shall be word-for-word identical to the notices furnished by the Department to the applicant for publication. These notices include but may not be limited to:

(1) Notice of the public meeting in accordance with Reg.22.302(d).

(2) Notice of the receipt of an administratively complete application in accordance with Reg.22.304(c).

(3) Notice of the preliminary decision to issue a permit in accordance with Reg.22.304(e).

(4) Notice of the Public Hearing in accordance with Reg. 22.305(j).

(5) Notice of preliminary decision to modify the permit in accordance with Reg. 22.308(c).

(b) Publication Paid by Department - The Department will arrange and pay for the publication of notices when the application for a permit is denied, for special meeting notices and other notices as may be required by law to be paid for by the Department.

(c) Selection of Newspaper - Publication of notices shall be in a newspaper of general circulation published in the county in which the disposal facility is to be located, or where no newspaper is published in the county, a newspaper of general circulation in that county. Selection of the newspaper shall be subject to Department approval.

(d) Proof of Publication Required - In accordance with Regulation Number 8, the applicant shall furnish to the Department, proof of payment and proof of publication of all notices required to be published by the applicant. No solid waste disposal permit will be issued unless proper proof of publication and payment of legal notices is furnished to the Department.

(e) Public Meeting for Proposed Landfill Sites - The Department shall hold a public meeting in accordance with the requirements of Reg.22.302(c).

(f) Notice of Application and Request for Hearing - In accordance with Regulation Number 8, upon determination by the Department that an application for a solid waste disposal or processing facility is administratively complete in accordance with Reg. 22.304(a), a public notice of the receipt of the application shall be prepared by the Department for publication by the applicant. The date of publication of the notice shall mark the beginning of a ten (10) business day period in which any interested party may request the Department to hold a public hearing in accordance with this Section.

(g) Notice of Preliminary Permit Decision - Upon review of the final application package, the Director will make a preliminary decision to deny or issue a permit for solid waste disposal or processing. Appeal of the Director's decision shall be in accordance with Regulation Number 8 of the Pollution Control and Ecology Commission, Administrative Procedures.

(1) Should the application for a permit be denied, notice shall be sent to the applicant in accordance with Regulation Number 8.

(2) Should the Director decide to issue the permit, a draft permit shall be prepared and provided to the applicant. The Department will prepare public notice of the preliminary decision to issue the permit and furnish the notice to the applicant for publication in accordance with Reg.22.304(e).

(h) Public Comment Period - The publication date of the preliminary decision to issue or deny the permit shall mark the beginning of a thirty (30) day comment period. Any interested party may submit written comments to the Department regarding the technical aspects and regulatory conformance of the preliminary decision to issue or deny a permit during the comment period in accordance with the requirements described herein and in Regulation Number 8 of the Pollution Control and Ecology Commission, Administrative Procedures.

(i) Decision to Hold a Public Hearing - Following the preliminary decision to issue or deny a permit in accordance with Reg.22.305(g), the Director shall determine whether to hold a formal public hearing concerning the preliminary decision. The decision on whether to hold a public hearing is solely at the Director's discretion.

(j) Notice of Public Hearing - Should a public hearing be scheduled, the public shall be notified as follows:

(1) The applicant and all persons requesting a hearing in conformance with Reg.22.305(h) shall be notified prior to the hearing date by the Department by first class mail. certified mail, return receipt requested.

(2) The Department shall prepare public notice of the public hearing and furnish the notice to the applicant for publication in accordance with Reg.22.305 (c) and (d). The notice of the public hearing shall include all pertinent facts concerning sources of information on the permit application, time, date, and location of the public hearing, and shall also provide twenty (20) days minimum notice prior to the public hearing date.

(k) Combined Comment Period and Notice of Hearing - At the Department's discretion, a single notice combining the thirty (30) day comment period provided for in Reg.22.305(h) and the notice of public hearing may be published. A twenty (20) day minimum notice of the hearing shall be provided.

(l) Public Hearing - Where the Director determines that a public hearing will be held, where possible, the hearing will be scheduled at a location within the county in which the solid waste disposal or processing facility is proposed to be located. conduct of the hearing shall be in accordance with Regulation Number 8 of the Pollution Control and Ecology Commission, Administrative Procedures.

Reg.22.306- Final Permit Decision

(a) Response to Comments - All written comments received during any designated comment period or written or oral comments received at any public hearing called for by the Director shall be considered in the development of the final permit decision.

(b) Final Decision - Following the close of the public comment period, the Director shall make a final permit decision regarding the application. The Director may issue the final permit without

changes, require changes to the permit and the permit application prior to issuing the final permit, or may deny the permit.

(c) Rationale for Permit Decision - The Department shall develop a rationale for all permitting decisions. The rationale shall summarize all comments received for the record during the public comment period or any public hearing held by the Department; and any changes made in response to public comments, the basis for permit conditions and other decisions made by the Director in developing the final permit decision. The rationale shall be provided to the applicant and any persons making comments for the record.

(d) Standing to Appeal Final Decision - Standing to appeal any permit or permit provision, and appeal procedures shall be in accordance with Regulation Number 8 of the Pollution Control and Ecology Commission, Administrative Procedures. Generally, other than the permit applicant, only those persons who submit written comments during the specified comment period or who make formal comments for the record at a public hearing called by the Department will have legal standing to appeal the issuance or denial of the final permit or any of the permit provisions.

Reg.22.307- Transfer Of Permits

(a) Procedures for Permit Transfer - Permits for the construction and operation of solid waste disposal and processing facilities are transferable provided the current and proposed permittees submit an administratively complete application that consists of:

(1) A written request for the permit transfer presented on a form provided by the Department;

(2) A certification by the current permittee that all facility engineering design, operational plans and other permit application documents have or will be furnished to the new permittee prior to permit transfer;

(3) Adequate documentation from the current permittee that the proposed permittee shall have ownership or control of the site for which transfer of permit has been requested;

(4) A completed disclosure statement of the proposed permittee;

(5) Documentation of adequate Financial Assurance in compliance with Chapter 14 Financial Assurance Criteria of these regulations.

(6) A permit transfer fee in accordance with the current fee schedule.

(b) Denial of Permit Transfer - Should the Director determine that the proposed permittee has a history of noncompliance as defined by A.C.A. § 8-1-106 et seq. and as described in Reg. 22.301(e), the Director shall provide written notice to the current and proposed permit holder within thirty (30) days of submittal of an administratively complete application for a permit transfer.

(c) Automatic Transfer - Thirty (30) days following the receipt by the Department of an administratively complete application for a permit transfer, the permit shall automatically transfer to the proposed permit holder unless the Director determines that the proposed permittee is a "bad actor" as described in the above section.

Reg.22.308- Modification Of Permits

(a) Procedures for Permit Modification - The permittee may at any time, request a modification to the permit. Submittal of an application for modification of permit shall be on forms made available by the Department and shall include:

(1) Name, current mailing address, and permit number of the applicant;

(2) A complete description of the proposed modification including all necessary revisions to the original or previously modified permit application;

(3) Revised permit plans, specifications, narrative;

(4) Permit modification fee in accordance with the current fee schedule;

(5) Any other requirements deemed necessary by the Department to adequately assess the impact of the proposed modification.

(b) Classification of Modifications - The Director shall review all proposed modification and determine if the proposed modification shall be considered a major modification or a minor modification for purposes of assessing fees and public notification. The decision on whether or not a proposed modification may be considered to be major or minor rests solely with the Director.

(c) Major Modifications - Public notice in accordance with Reg.22.305 shall be provided for all modifications deemed by the Director to be major modifications. A public hearing may be scheduled at the Director's discretion on the proposed modification in accordance with Reg. 22.305(l). Major modifications may include:

(1) An increase of ten percent (10%) or greater in the total permitted capacity of the solid waste disposal facility;

(2) More than one (1) increase of less than 10% of the total permitted capacity of the solid waste disposal facility;

(3) An increase in the estimated permit site life of the facility of eighteen (18) months or greater.

(4) Changes to the landfill classification;

(5) An increase of the total land area permitted for waste disposal;

(6) Changes that may alone or in combination with other changes may result in a significant environmental impact.

(d) Minor Modifications - Where the Director determines that the proposed modification is a minor change in the construction or operation of the solid waste facility and that the modification request will be granted, the permit will be modified and no public notice of the modification will be made.

(e) Implementation of Modifications - No modification in the construction or operation of a solid waste facility shall be implemented unless and until written approval of the modification or a modified permit is received by the permittee.

(f) Modifications Initiated by the Department - The Director may, at any time in which construction or operations at a permitted facility are not in compliance with the current provisions of this regulation or other statutes and regulations, modify the permit to conform to current regulations, statutes, or standards. In addition, the Director may at any time, modify a permit in order to make administrative changes or corrections to the permit or to provide for the renewal of expired permits.

Reg.22.309 – Duration of Permits

(a) Landfill permits regulate active fill operations, closure and post-closure phases of activities at a facility. The active fill operations phase shall cease if the facility places waste beyond the permitted boundaries, or exceeds the permitted capacity, fill volume or elevations. The closure and post-closure phases include all required and approved activities contained in Chapter 13 herein and the facility permit.

(b) Authorization to place fill in a permitted landfill or area of a permitted landfill shall cease if any of the following conditions occur:

(1) The facility reaches the approved elevation in a fill location. The permittee shall not place fill, daily cover or intermediate cover above any permitted elevation.

(2) The facility places waste outside the permitted boundaries.

(c) Any landfill permittee who places or disposes waste above permitted elevations, or beyond the permitted landfill perimeter or in excess of the permitted capacity of the unit shall immediately cease fill operations in the area containing excess fill. The permittee shall provide to the Department an overfill management plan in writing within seven (7) days of learning of the excess fill. The permittee shall remove the excess fill, including waste, daily cover or intermediate cover, to bring the area into compliance within thirty (30) days of learning of the overfill.

(d) All other types of facility permits shall expire according to the date contained in the individual permit or General Permit, as appropriate.

(e) For all permits, permits may be revoked for failure to maintain compliance with these regulations, or failure to maintain permit fees. Permit revocation under the described conditions will not relieve the permittee from the facility closure requirements and post-closure care as may be required by regulation or permit.

(f) All permittees shall be responsible for payment of all annual fees including permit fees until all required closure and post-closure activities have been certified by a professional engineer registered in the State of Arknasas and accepted by the Department and a notification submitted to the Department by the permittee stating that permitted activities have ceased and requesting the specific permit be placed in void status.

Chapter 4 Class 1 Landfills

Reg.22.401- Location Restrictions

(a) Responsibilities - Applicants for a permit for a Class 1 landfill shall be responsible for selection of the proposed site subject to the provisions of this section. Solid waste disposal facilities or practices which violate any of the following criteria pose a reasonable probability of adverse effects on health or the environment.

Reg.22.402- Airport Safety

(a) Location Prohibition for New Facilities - New permitted Class 1 landfills shall not be located within 10,000 feet (3,048 meters) of any airport runway end used by turbojet aircraft or within 5,000 feet (1,524 meters) of any airport runway end used by only piston-type aircraft.

(b) Demonstration for Existing Class 1 Landfills - Existing Class 1 landfills, existing units and lateral expansions that are located within the distances specified in paragraph (a) must demonstrate that the units are designed and operated so that the municipal solid waste landfill unit does not pose a bird hazard to aircraft. Existing Class 1 landfills and existing units shall make the demonstration not later than the compliance dates specified in Reg.22.103(f) and submit the demonstration to the Director for approval. Lateral expansions shall make the demonstration prior to construction.

(c) FAA Notification - Owners or operators proposing to site new Class 1 municipal solid waste landfill units and lateral expansions 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) and furnish proof of notification to the Director.

A prohibition on locating a new municipal solid waste landfill near certain airports was enacted in Section 503 of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (Ford Act), Pub. L. 106-181 (49 U.S.C. 44718 note). Section 503 prohibits the "construction or establishment" of new municipal solid waste landfills after April 5, 2000 within six miles of certain smaller public airports. The Federal Aviation Administration (FAA) administers the Ford Act and has issued guidance in FAA Advisory Circular 150/5200-34, dated August 26, 2000. Owners or operators proposing to locate new Class 1 municipal solid waste landfill units within a six-mile radius of any airport runway end must furnish to the Director proof of approval from the Federal Aviation Administration (FAA) for the new Class 1 municipal solid waste landfill unit or units.

According to the guidance, no person shall construct or establish a new municipal solid waste landfill that receives putrescible waste within six miles of a public airport that has received grants under chapter 471 and is primarily served by general aviation aircraft and regularly scheduled flights of aircraft designed for 60 passengers or less unless the State aviation agency requests that the Administrator of the Federal Aviation Administration exempt the landfill from the application of this subsection and the Administrator determines that such exemption would have no adverse impact on aviation safety.

The limitations of § 44718(d), as amended, only apply to a new municipal solid waste landfill (constructed or established after April 5, 2000). The statutory limitations are not applicable where construction or establishment of a municipal solid waste landfill began on or before April 5, 2000, or to an existing municipal solid waste landfill (received putrescible waste on or before April 5,

2000). Further, an existing municipal solid waste landfill that is expanded or modified after April 5, 2000, would not be held to the limitations of § 44718(d), as amended.

Reg.22.403- Floodplains

(a) Applicability - Owners or operators of new Class 1 landfill units, existing units, and lateral expansions located in 100-year floodplains must demonstrate that the unit will not restrict the flow of the base 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 and the environment.

(b) Effective Date - The owner or operator of existing Class 1 landfills must place the demonstration in the operating record and submit the demonstration to the Director not later than the compliance date in Reg.22.103(f).

Reg.22.404- Wetlands

(a) Applicability - New Class 1 municipal solid waste landfill units and lateral expansions, and other facilities identified in these regulations, shall not be located in wetlands, unless the owner or operator can make the following demonstrations to the Director.

(1) Where applicable under Section 404 of the Clean Water Act or applicable State wetlands laws, the presumption that a practicable alternative to the proposed landfill is available which does not involve wetlands is clearly rebutted;

(2) The construction and operation of the unit will not:

(i) Cause or contribute to violations of any applicable State water quality standard,

(ii) Violate any applicable toxic effluent standard or prohibition under Section 307 of the Clean Water Act,

(iii) Jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Endangered Species Act of 1973, and

(iv) Violate any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary;

(3) The unit will not cause or contribute to significant degradation of wetlands. The owner or operator must demonstrate the integrity of the unit and its ability to protect ecological resources by addressing the following factors:

(i) Erosion, stability, and migration potential of native wetland soils, muds and deposits used to support the unit;

(ii) Erosion, stability, and migration potential of dredged and fill materials used to support the unit;

(iii) The volume and chemical nature of the waste managed in the unit;

(iv) Impacts on fish, wildlife, and other aquatic resources and their habitat from release of the solid waste;

(v) The potential effects of catastrophic release of waste to the wetland and the resulting impacts on the environment; and

(vi) Any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected.

(4) To the extent required under Section 404 of the Clean Water Act or applicable State wetlands laws, steps have been taken to attempt to achieve no net loss of wetlands (as defined by acreage and function) by first avoiding impacts to wetlands to the maximum extent practicable as required by paragraph (a)(1) of this section, then minimizing unavoidable impacts to the maximum extent practicable, and finally offsetting remaining unavoidable wetland impacts through all appropriate and practicable compensatory mitigation actions (e.g., restoration of existing degraded wetlands or creation of man-made wetlands); and

(5) Sufficient information is available to make a reasonable determination with respect to these demonstrations.

(b) Class 1 Effective Date - New Class 1 municipal solid waste landfill units and lateral expansions shall meet all of the requirements of this section and shall demonstrate to the Director that the facility is not located in a wetland, or make the demonstration required in paragraph (a) prior to permitting of the new unit or lateral expansion of an existing unit.

Reg.22.405- Fault Areas

(a) Applicability - New units and lateral expansions shall not be located within two hundred (200) feet (60 meters) of a fault that has had displacement in Holocene time unless the owner or operator demonstrates to the Director that an alternative setback distance of less than Two hundred (200) feet (60 meters) will prevent damage to the structural integrity of the unit and will be protective of human health and the environment.

Reg.22.406- Seismic Impact Zones

(a) Applicability - New units and lateral expansions shall not be located in seismic impact zones, unless the owner or operator demonstrates to the Director 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. The owner or operator must place the demonstration in the operating record, and notify the Director that it has been placed in the operating record, and provide the demonstration to the Director for approval.

Reg.22.407- Unstable Areas

(a) Applicability - Owners or operators of new units, existing units, and lateral expansions located in an unstable area must demonstrate that engineering measures have been incorporated into the unit's design to ensure that the integrity of the structural components of the unit will not be disrupted. The owner or operator must place the demonstration in the operating record, notify the Director that it has been placed in the operating record, and provide the demonstration to the Director for

approval. The owner or operator 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).

(b) For purposes of this section:

(1) 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 terrain.

(2) 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 facility that is necessary for protection of human health and the environment.

(3) 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 an solid waste unit.

(4) 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 municipal solid waste landfill unit, because of natural or man-induced events, results in the down slope 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 fluction, block sliding, and rock fall.

(5) Karst terrain 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 terrain include, but are not limited to, sinkholes, sinking streams, caves, large springs, and blind valleys.

Reg.22.408- Separation Distances And Buffer Zones

(a) New Facilities and Expansions - Applicants for new Class 1 landfills and expansions to the permitted area shall comply with the following minimum separation distances and buffer zones as measured from the proposed active portion of the landfill:

(1) Five hundred (500) feet of an existing well or water intake used as a drinking water source as determined at the earliest date the notification or application is made to local or regional authorities as required by Reg.22.201, Reg.22.202 or Reg.22.203 as applicable

(2) Three hundred (300) feet of an existing dwelling, unless owned by the applicant, as determined at the earliest date the notification or application is made to local or regional authorities as required by Reg.22.201, Reg.22.202 or Reg.22.203; and within

(3) One hundred (100) feet of the property boundary.

(b) Existing Landfills - Existing landfill areaspermitted by the Department prior to May 7, 1995, for waste disposal are exempt from the requirements of paragraph (a) above. Expansions to the permitted area and the design of new landfill units after May 7, 1995, shall conform with buffer zone width requirements.

(c) Proximity to Highways - Landfills shall comply with regulations promulgated by the State of Arkansas Highway and Transportation Commission. Landfills shall not be established, operated, or maintained within one thousand (1,000) feet of the nearest edge of the right-of-way of any interstate, primary or other state highway designated by the Highway and Transportation Commission unless the landfill operations are screened by natural objects, plantings, fences, or other appropriate means so as not to be visible from the main-traveled way of the highway.

(d) Construction in the Buffer Zone - No permanent construction of any kind shall occur in the buffer zone other than fencing, access roadways and monitoring well construction. Landscaping for aesthetics is encouraged in the buffer zone and may be required by the Department for individual sites. Where appropriate landscaping for esthetics is undertaken, pay stations, administration buildings, parking, surface water control systems such as diversion ditches and sedimentation ponds and other facilities may be permitted in the buffer zone area.

(e) Local Zoning - Nothing contained herein shall be construed to limit or interfere with local zoning requirements and ordinances pertaining to the operation of solid waste facilities. The criteria set forth in this section is intended solely as minimum criteria for facilities located on lands where land use is not regulated by local authorities. Requirements herein do not relieve the applicant from complying with any more restrictive, comprehensive local zoning requirements or regulations duly promulgated by regional solid waste management districts.

Reg.22.409- Closure Of Existing Landfill Units

(a) Applicability - Existing Class 1 units that cannot make the demonstrations specified in Reg.22.402, pertaining to airports, Reg.22.403 pertaining to floodplains, or Reg.22.407 pertaining to unstable areas, must close by October 9, 1996, in accordance with the requirements of Reg.22.1301 and conduct post-closure activities in accordance with Reg.22.1301.

(b) Closure Deadline Extension - The deadline for closure of existing units required by paragraph (a) may be extended for up to two years if the owner or operator demonstrates to the Director that:

(1) There is no available alternative disposal capacity;

(2) There is no immediate threat to human health and the environment.

(c) Permit Denial for NonCompliance - New units and lateral expansions of Class 1 facilities that cannot meet the requirements of this Chapter will not be permitted by the Department.

Reg.22.410- Endangered Species

(a) Prohibition Against Taking - Solid waste facilities and practices shall not cause or contribute to the taking of any endangered or threatened species of plants, fish, or wildlife.

(b) Destruction of Habitat - The facility or practice shall not result in the destruction or adverse modification of the critical habitat of endangered or threatened species as identified in 50 CFR Part 17.

Reg.22.411- General Operating Requirements

(a) Conformance with Permit Documents - All operations at the landfill shall be in accordance with the approved plans and operating plan and narrative.

(b) Operator Licensing Requirements - All operations shall be performed by licensed on-site operators at all times who are certified in accordance with Regulation Number 27 of the Pollution Control and Ecology Commission.

(c) Working Face Size - Unloading shall be supervised and dumping shall be confined to the smallest practical area. Multiple working faces will not be allowed unless specifically approved in the facility operating plan.

(d) Waste Spreading and Compacting - As rapidly as solid waste is unloaded for disposal it shall be spread and compacted in the smallest practical area and covered in accordance with the requirements of Reg. 22.413.

(e) Salvage Operations - Salvage operations shall not be permitted at the operating face of the fill. A salvage operation may be approved by the Department under the following conditions:

(1) An area has been designated by the permittee for the recovery of salvageable material.

(2) The operations shall not interfere with or otherwise delay the activities of the working face.

(3) The recovery of salvageable material must be conducted in an orderly manner.

(4) All salvaged materials shall be removed from the landfill site daily, or properly stored so that they will not create a nuisance or unsightly appearance.

(f) Prohibited Activities - The following activities shall be prohibited in conjunction with or upon the site of the landfill:

(1) Any scavenging of materials as defined herein;

(2) Any feeding of farm or domestic animals;

(3) Depositing waste in standing water; and

(4) Open burning as defined herein.

(g) Litter Control - Litter control provisions shall be maintained at all times. If daily or more frequent cover does not control on and off site litter, other methods may be required, such as, but not limited to litter fences and litter crews.

(h) Additional Surface Water Controls and Best Management Practices - In conjunction with and in addition to the requirements of Reg.22.418, Reg.22.419, Reg.22.427 and Reg.22.430, the owner or operator shall:

(1) Contour the surface of the working portion of the landfill to minimize surface water run-on or flow into or through the working face; and

(2) Install, construct, repair and maintain controls to prevent off-site sediment accumulation at all landfill, soil stockpile, and borrow site areas. Temporary and permanent seeding, grading, diking, terracing, diversion ditches, silt fencing, silt traps, vegetation filter strips, mulching, erosion control blankets and matting, gravel filter berms, check dams, riprap, sediment ponds and other best management practices for erosion and sediment control shall be provided as necessary. Best management practices for the site shall be in accordance with any stormwater permit issued for the site, shall be described in the operating narrative, and shall be included in the permit plans as appropriate.

(3) Final and interim slope stabilization must conform with Reg.22.427(f).

(i) Final Cover Vegetation and Maintenance - Immediately after permitted final grades have been attained and a final cover system installed, a cover of suitable perennial vegetation shall be established and maintained to prevent erosion of cover soils. The vegetative cover shall be mowed at least annually or as needed to control the growth of undesirable annual weeds and woody vegetation, and to allow for inspection of the integrity of the cover system.

(j) Equipment Requirements - The owner or operator shall have provisions for the routine maintenance of equipment at the landfill. Adequate backup equipment shall be available within 24 hours in the event of breakdowns.

(k) Communications and Emergency Response - The owner or operator shall have an adequate telephone communication system in the event of fire or other emergency situations that may arise at the landfill and a written emergency response plan shall be maintained at the site.

(l) Ancillary Facilities - The owner/operator shall have an on site building/office with a potable water supply and sanitary facilities for site personnel.

(m) Nuisance Avoidance - The owner or operator shall operate the landfill in a manner to avoid creating a public nuisance or public health hazard.

(n) Other Requirements - The Department may require any additional information or action deemed necessary to assure an environmentally safe operation of the facility.

(o) Cover Maintenance - The owner or operator shall be responsible for maintaining the cover system integrity and shall promptly repair erosion, washout, tracking, or other defects that result in exposed refuse in either daily or intermediate cover, or exposure of the barrier system of the final

cover. Areas of leachate seepage, or areas exhibiting evidence of leachate seepage such as staining and discoloration of the cover system shall also be promptly repaired.

(p) Wet Weather Repairs - Due care shall be exercised in performing repairs during wet weather conditions to prevent the creation of additional cover defects. Prompt temporary measures shall be implemented in such cases until permanent repairs and remedies can be implemented.

Reg.22.412- Procedures For Excluding The Receipt Of Hazardous Waste and Unauthorized Waste

(a) Applicability - Owners or operators must implement a program at the facility for detecting and preventing the disposal of regulated hazardous wastes as defined in 40 CFR Part 261,polychlorinated biphenyls (PCB) wastes regulated under the Toxic Substances Control Act (TSCA) for disposal as defined in 40 CFR Part 761, and additional unauthorized wastes as of the compliance date in Reg.22.103(f). This program must include, at a minimum:

(1) Random inspections of incoming loads unless the owner or operator takes other steps to ensure that incoming loads do not contain regulated hazardous wastes, PCB wastes or other unauthorized wastes;

(2) Records of any inspections;

(3) Training of facility personnel to recognize regulated hazardous waste,PCB wastes and additional unauthorized wastes; and

(4) Notification of the Director if a regulated hazardous waste, PCB waste, or other unauthorized waste is discovered at the facility.

(b) Definitions - For purposes of this section, "regulated hazardous waste" means a solid waste that is a hazardous waste, as defined in 40 CFR 261.3, that is not excluded from regulation as a hazardous waste under 40 CFR 261.4(b) or was not generated by a conditionally exempt small quantity generator as defined in 40 CFR 261.5.

(c) Hazardous Waste Exclusion Plan - Each facility shall develop, implement, and maintain a written plan for hazardous waste exclusion to demonstrate compliance with this section. The plan shall include at a minimum:

(1) Purpose of monitoring and roles of landfill personnel;

(2) Types of wastes to be excluded;

(3) A written protocol that describes the methods to identify and screen potentially hazardous waste and other unauthorized wastes before it enters the landfill including the review of industrial customer's procedures for separating hazardous waste and other unauthorized wastes from other wastes. The written protocol shall describe the procedures, evaluation criteria, testing requirements and decision making process that will be followed to determine whether to accept or reject industrial or process waste for disposal before it enters the landfill;

(4) Sampling and analysis procedures to be followed for new customers and for periodic re-testing of existing customer wastes. Testing laboratories shall be certified by the Department;

(5) Random inspection procedures and documentation;

(6) Personnel training to be provided;

(7) Recordkeeping requirements; and

(8) A contingency plan, that includes notification procedures, and remedial actions to be taken when hazardous waste and other unauthorized wastes are identified.

Reg.22.413- Cover Material Requirements

(a) Daily Cover- Except as provided in paragraph (d) of this section, the owners or operators of all Class 1 Landfills must cover disposed solid waste with six (6) inches of earthen material at the end of each operating day, or at more frequent intervals if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging and to limit the generation of leachate.

(b) Alternative Cover Materials - Alternative cover materials of an alternative thickness (other than at least six inches of earthen material) may be approved by the Director, either through individual requests or through generalized Department approval upon demonstration that the alternative material and thickness controls disease vectors, fires, odors, blowing litter, and scavenging without presenting a threat to human health and the environment.

(c) Interim Cover Material Requirements - A compacted layer of cover soil of sufficient quantity to ensure there is no exposed waste, but not less than twelve (12) inches in total thickness including the six inches of daily cover (or an approved alternate material), shall be applied upon surfaces that will not receive an additional application of waste of final cover within 180 days.

(d) Waiver - The Director may grant a temporary waiver from the requirement of paragraph (a), (b) and (c) of this section if the owner or operator satisfactorily demonstrates that extreme conditions exist that make meeting such requirements impractical. Failure of the operator to stockpile adequate cover material shall not constitute justification for a waiver under this section.

Reg.22.414- Disease Vector Control

(a) Applicability - As provided in 40 CFR 258.22, owners or operators must prevent or control on-site populations of disease vectors using techniques appropriate for the protection of human health and the environment.

Reg.22.415- Explosive Gases Control

(a) Applicability - As provided in 40 CFR 258.22, owners or operators of all permitted landfills shall ensure that:

(1) The concentration of methane gas generated by the facility does not exceed twenty five percent (25%)of the lower explosive limit (LEL) 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) Monitoring Program Requirements - Owners or operators must implement a routine methane monitoring program as outlined in this section to ensure that the standards of paragraph (a) are met.

(1) The type and frequency of monitoring must be determined based on the following factors:

(i) Soil conditions;

(ii) The hydrogeologic conditions surrounding the facility;

(iii) The hydraulic conditions surrounding the facility; and

(iv) The location of facility structures and property boundaries.

(2) The minimum frequency of monitoring shall be quarterly.

(c) Gas Monitoring Plan - The owner or operator of an existing or new facility shall prepare and submit to the Department for review and approval a gas monitoring plan demonstrating how the requirements of this section will be met. The plan shall include a preliminary action plan outlining immediate steps that will be taken to protect human health and safety should methane gas levels exceeding the limits specified in paragraph (a) of this section are detected. The plan shall include at a minimum the following information:

(1) Site specific factors affecting landfill gas migration;

(2) Site conditions, landfill history, site design and construction practices;

(3) Proximity and construction of on-site and off-site structures within 1/4 mile of the limits of refuse;

(4) Monitoring system design rationale and methodology that includes detailed location and design plans for in-soil gas probes; narrative description of rationale for location and depths of the gas probes; narrative, schedules and specifications for the construction of the probes and implementation of an approved monitoring routine; ;

(5) A description of the monitoring points in structures, and equipment locations;

(6) Monitoring procedures including permanent probe monitoring, monitor calibration, recordkeeping, etc; and

(7) Contingency plans in the case of monitoring results the LEL, notification procedures, remedial actions, etc.

(d) Elevated Level Detection Contingency Measures - If methane gas levels exceeding the limits specified in paragraph (a) of this section are detected, the owner or operator of all permitted landfills must:

(1) Immediately take all necessary steps to ensure protection of human health and notify the Director;

(2) Within seven (7) days of detection, place in the operating record the methane gas levels detected and a description of the steps taken to protect human health; and

(3) Within sixty (60) days of detection, implement a remediation plan for the methane gas releases, place a copy of the plan in the operating record, and notify the Director that the plan has been implemented. The plan shall describe the nature and extent of the problem and the proposed remedy.

(4) The Director may establish alternative schedules for demonstrating compliance with paragraphs (d)(2) and (3) of this section.

(e) Definition - For purposes of this section, "lower explosive limit" means the lowest percent by volume of a mixture of explosive gases in air that will propagate a flame at $25^{o}C$ and atmospheric pressure.

(f) Recordkeeping - Records shall be maintained in accordance with Reg.22.421 to document compliance with this section.

Reg.22.416- Air Criteria

(a) Applicability - As provided in 40 CFR 258.24 owners or operators must ensure that the units 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) Burning Prohibition - Open burning of solid waste, except for the infrequent burning of agricultural wastes, silvicultural wastes, landclearing debris, diseased trees, or debris from emergency clean-up operations and ordinance that may be allowed by the Arkansas Air Pollution Control Code, is prohibited at all units.

(c) Fire Safety - A facility or practice shall not pose a hazard to the safety of persons or property from fires. This may be accomplished through compliance with this section and through the periodic application of cover material or other techniques as appropriate.

Reg.22.417- Access Requirements

(a) Applicability - As provided in 40 CFR 258.15 and this section, owners or operators must control public access and prevent unauthorized vehicular traffic and illegal dumping of wastes by using artificial barriers, natural barriers, or both, as appropriate to protect human health and safety and the environment.

(b) Required Facilities - The site shall be adequately fenced with an entrance gate that can be locked. There shall be a sign with the name of the facility, permit number, emergency telephone number, opening and closing hours and days of operation posted at the entrance to the facility.

(c) Access and Operational Roads - All weather operational roads shall be provided for vehicle movement within the site. The roads shall be of such construction quality to allow easy access in

all weather conditions to all portions of the active disposal site and to other operational areas where all weather access is necessary to achieve timely compliance with permit requirements.

(d) Hours of Access - Access to the site shall be permitted only during the hours when operating personnel are on the site.

Reg.22.418- Run-On/Run-Off Control Systems

(a) Applicability - As provided in 40 CFR 258.15, owners or operators 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 24-hour, 25-year (return frequency) 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) Active Portion Runoff - Run-off from the active portion of a Class 1 landfill unit as defined in Reg. 22.102 must be handled in accordance with Reg. 22.419 and Reg.22.429.

Reg.22.419- Surface Water Requirements

(a) General Requirements - As provided in 40 CFR 258.27 all Class 1 landfills shall not:

(1) Cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act, including, but not limited to, the National Pollutant Discharge Elimination System (NPDES) requirements, pursuant to Section 402 of the Clean Water Act;

(2) Cause the discharge of a nonpoint source of pollution to waters of the United States, 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;

(3) Cause a discharge of dredged material or fill material to waters of the United States that is in violation of the requirements under Section 404 of the Clean Water Act, as amended;

(4) Deposit waste in standing water; and

(5) Allow the discharge of leachate from the landfill unit unless the discharge is permitted under the NPDES system.

(b) Control Systems Required - Run-on and run-off control systems shall be designed, constructed and operated as necessary to meet the requirements of this section. Upon Department approval, run-on and run-off control systems may be removed from service at such time as closure activities have been completed, a permanent vegetation cover has been established, and there is no evidence of leachate seepage or other point and nonpoint discharges from the landfill unit.

Reg.22.420- Liquids Restrictions

(a) Applicability - As provided in 40 CFR 258.28 bulk or noncontainerized liquid waste may not be placed in Class 1 Landfills unless:

(1) The waste is household waste other than septic waste; or

(2) The waste is leachate or gas condensate derived from the unit and the unit, whether it is a new or existing or lateral expansion, is designed with a composite liner and leachate collection system as described in Reg.22.424(a)(2). The owner or operator must place the demonstration in the operating record and notify the Director that it has been placed in the operating record.

(b) Container Prohibition - Containers holding liquid waste may not be placed in a Class 1 unit 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.

(c) Mixing and Bulking - Landfills shall not accept liquid waste for treatment unless the landfill has an approved mixing or bulking area separate from the waste disposal area, and is equipped to solidify, test and certify that liquid wastes treated in the mixing or bulking area meet the requirements of this section for landfilling.

(d) Bulking/Mixing Methods - The liquid waste or waste containing free liquids shall be placed in the approved bulking area and shall be immediately crushed and blended with an approved absorbent material. Air drying of wastes shall not be utilized where the practice causes or contributes to the development of nuisance conditions including odors and vector attraction.

(e) Free Liquids Determination - Treated liquid wastes must not exhibit free liquids as determined by the paint filter test . The blended material must be capable of supporting cover soil and equipment prior to disposal in the landfill.

(f) Operation of Bulking/Mixing Area - The processing of liquid wastes shall not interfere with the normal waste handling operations or maintenance of the facility. The Department reserves the right to prevent the facility from further receipt and processing of this waste should it be determined the material is mishandled in any way.

(g) Liquid Waste Management Plan - An approved liquid waste management plan meeting the requirements of this section shall be maintained on-site and shall be followed in the treatment of liquid waste. The plan shall discuss at a minimum the following information:

(1) Purpose and regulations;

(2) Types of wastes acceptable for treatment and procedures for obtaining approval for acceptance;

(3) Methods to determine the types and amounts of treatment to be provided;

(4) Design, location, and operation of treatment facilities to include methods of receiving the waste into treatment or bulking areas;

(5) Methods to test and document the treated waste is acceptable for landfilling; and

(6) Personnel training and recordkeeping.

Reg.22.421- Recordkeeping Requirements

(a) Applicability - As provided in 40 CFR 258.29 and provisions herein, the owner or operator must record and retain at the facility in an operating record or in an alternative location approved by the Director the following information as it becomes available:

(1) Any required location restriction demonstrations;

(2) Inspection records, training procedures, and notification procedures required in Reg. 22.412;

(3) Gas monitoring results from monitoring and any remediation plans required by Reg. 22.415;

(4) Any design documentation for placement of leachate or gas condensate in a Class 1 Landfill as required under Reg.22.420(a)(2).

(5) Any demonstration, certification, finding, monitoring, testing or analytical data required by Chapter 12;

(6) Closure and post-closure care plans and any monitoring, testing, or analytical data as required by Reg. 22.1301 and Reg.22.1302;

(7) Any cost estimates and financial assurance documentation required by Chapter 14;

(8) Any quality assurance/quality control (QA/QC) documentation, certification, and test result relating to the construction of the landfill liner and leachate collection system, ground water monitoring system, and final cap; and

(9) Any other records required by Regulation 22.

(b) Department Notification - The owner or operator must notify the Director when the documents from paragraph (a) of this section have been placed or added to the operating record, and all information contained in the operating record must be furnished upon request to the Director or be made available at all reasonable times for inspection by the Director.

(c) Alternative Recordkeeping Schedules - The Director can set alternative schedules for recordkeeping and notification requirements as specified in paragraphs (a) and (b) of this section, except for the notification requirements in Reg.22.402(c) and Reg.22.1205(g)(1)(iii).

(d) Waste Receipt Records - Each owner or operator shall provide an adequate means of recording the weight of waste that is disposed in the landfill by each hauler or generator. At a minimum, each

facility shall have a "ticket" system, by which the hauler is provided a ticket or receipt of the disposal and the facility retains a duplicate of the ticket or receipt. The ticket or receipt shall be prepared so that the following information is displayed:

(1) The customer (hauler or generator) name;

(2) A unique identifier for the disposal truck or container (if the customer has more than one disposal vehicle);

(3) The amount of waste disposed as per Reg.22.421(j)); and

(4) The date, time and general location of disposal.

(5) A facility may propose an alternative system, if a demonstration can be made that the alternative system allows for an accurate determination of the source and waste quantities received, and otherwise meets the requirements of this section.

(e) Gas Monitoring Data - Explosive gas monitoring records shall be maintained that identify the test results, date of testing, test location, person performing the tests, local conditions that may impact test results, and any measures taken to mitigate hazards from explosive gases.

(f) Leachate Disposal - Leachate disposal records shall be maintained that document approval of the disposal method and location, and the date and quantity of leachate disposed of or recirculated in the landfill unit. Leachate analytical data shall be maintained for leachate disposed of and for leachate that is recirculated in the landfill unit.

(g) Special Waste - Records shall be maintained of the analytical results from the analysis of potentially hazardous commercial, industrial and process wastes that are accepted for disposal. In addition, written procedures for safely handling and disposing of special materials and potentially hazardous substances shall be maintained at the site.

(h) Inspections - Records of any periodic inspections required by this Regulation or permit conditions shall be maintained at the site.

(i) Retention Period - The records required under this section shall be permanently maintained by the owner or operator unless destruction of the records is authorized by the Director following the completion of the post closure monitoring period.

(j) Landfill Scales - All landfills having not completed closure as per the requirements of Reg.22.1301 by Janaury 1, 2004 shall have scales and shall weigh all solid waste received at the facility. This requirement may be satisfied by utilizing an alternative weighing system approved by the Director of the Arkansas Department of Environmental Quality. Solid Waste shall be weighed in accordance with the following provisions:

(1) All loads in excess of one (1) ton of two thousand pounds (2,000 lbs.) shall be weighed, unless otherwise authorized in writing by the Arkansas Department of Environmental Quality.

(2) Residential and other similar loads weighing less than one (1) ton of two thousand pounds (2,000 lbs.) may be estimated.

(3) Landfill scales shall be maintained and operated in accordance with the United States Department of Agriculture standards.

Reg.22.422- Operating Plan And Narrative

(a) Applicability - Each facility shall develop and implement an operating plan and narrative. The purpose of the operating plan and narrative shall be to develop and present site specific methods and procedures by which the facility will maintain and document compliance. The operating plan and narrative shall address the requirements of this regulation and any other regulations applicable to the operation and construction of the facility.

(b) Submission Date - The operating plan and narrative shall be submitted to and approved by the Department as either a part of the permit application process (Reg.22.303), permit modification process (Reg.22.308) or permit renewal process.

(c) Updates - Each facility shall update the operating plan and narrative as required to reflect current operations and regulations. Revisions to the document shall also be submitted to the Department which reserves the right to require that the changes be accomplished through permit modification prior to implementation.

Reg.22.423- Annual Engineering Inspection Reports

(a) Applicability - This section applies to all permitted Class 1 landfills.

(b) Report Requirements - A professional engineer registered in the State of Arkansas shall inspect the landfill site at least annually and prepare an annual report addressing operational compliance with permit conditions, permit plans, specifications, narrative and all applicable regulations. The Annual Engineering Inspection Report shall address the 12-month period from January through December and shall be submitted to ADEQ by March 31 of the following year. The Annual Engineering Inspection Report shall contain at a minimum:

(1) The volumetric capacity remaining in the current landfill cell or area and the projected date for opening new cells or areas;

(2) The estimated remaining volumetric capacity of all permitted Class 1 landfill units, the landfill capacity (total air space) utilized during the past one year period, and the estimated remaining site life (in years) based upon the utilization rate during the previous one (1) year period.

(3) Documentation of compliance of facility fill progression with the approved permit plans, specifications and operating narrative;

(4) Documentation of compliance with the operating requirements of this regulation, permit conditions, and the approved operating plan and narrative;

(5) An updated contour map that depicts:

(i) The horizontal and vertical extent of the active and inactive fill areas;

(ii) The status of each permitted landfill unit or cell (future unit, active unit, inactive, under construction, under interim cover, undergoing closure, closed, post-closure, etc.);

(iii) The survey grid system required by Reg.22.426;

(iv) The location of any other visible surface features or improvements such as roads, fences, buildings, gas control systems, surface water control systems, etcetera; and

(v) The person responsible for gathering survey data and the date(s) that survey data was taken to prepare the map. For purposes of annual reports, survey data may be collected by any person familiar with survey techniques, however, a professional land surveyor, registered in the State of Arkansas, shall perform the initial survey of new units required under Reg.22.428(h) and final survey of closed units required under Reg.22.1301(i).

(6) Quantity, location and characteristics of leachate collected, recirculated and disposed;

(7) Maintenance of stormwater controls and other best management practices for erosion control;

(8) Status of capping and closure of completed areas;

(9) Status of remedial or corrective actions taken;

(10) Updated Financial Assurance documentation as required in Chapter 14 Financial Assurance Criteria of these regulations.

(11) Revised or updated facility Closure Plan in accordance with the requirements contained in Chapter 13 Closure and Post-Closure Care of these regulations.

(12) Any other items that affect compliance at the landfill;

Reg.22.424- Minimum Design Criteria

(a) Applicability - New Class 1 Landfills and lateral expansions shall be constructed:

(1) In accordance with a design approved by the Director. The design must ensure that the concentration values listed in Table 1 of this section shall not be exceeded in the uppermost aquifer at the relevant point of compliance, as specified by the Director under paragraph (d) of this section, or

(2) With a composite liner, as defined in paragraph (b) of this section and a leachate collection system that is designed and constructed to maintain less than a 30-cm (12 inch) depth of leachate over the liner.

(b) Definition - For purposes of this section, "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. A protective layer consist of no less than twelve (12) inches of material approved by the Department and suitable to protect the FML component.

(c) Liner Design Approval - When approving a design that complies with paragraph (a)(1) of this section, the Director shall consider at least the following factors:

(1) The hydrogeologic characteristics of the facility and surrounding land;

(2) The climatic factors of the area; and

(3) The volume and physical and chemical characteristics of the leachate.

(d) Point of Compliance - The relevant point of compliance specified by the Director 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 municipal solid waste landfill unit. In determining the relevant point of compliance, the Director shall consider at least the following factors:

(1) The hydrogeologic characteristics of the facility and surrounding land;

(2) The volume and physical and chemical characteristics of the leachate;

(3) The quantity, quality, and detection, of flow of ground water;

(4) The proximity and withdrawal rate of the ground-water users;

(5) The availability of alternative drinking water supplies;

(6) The existing quality of the ground water, including other sources of contamination and their cumulative impacts on the ground water and whether ground water is currently used or reasonably expected to be used for drinking water;

(7) Public health, safety, and welfare effects; and

(8) Practicable capability of the owner or operator.

(e) Minimum design criteria shall comply with the requirements under Reg.22.1301 et seq. where applicable.

Table 1 Design Standard Concentration Values

Chemical	MCL (mg/l)
Arsenic	0.05
Barium	2.0
Benzene	0.005
Cadmium	0.005
Carbon tetrachloride	0.005
Chromium	0.1
2,4-Dichlorophenoxy acetic acid	0.1
1,4-Dichlorobenzene	0.075
1,2-Dichloroethane	0.005
1,1-Dichloroethylene	0.007
Endrin	0.0002
Fluoride	4
Lindane	0.002
Lead	0.015
Mercury	0.002
Methoxychlor	0.1
Nitrate	10
Selenium	0.05
Silver	0.05
Toxaphene	0.005
1,1,1-Trichloromethane	0.2
Trichloroethylene	0.005
2,4,5-Trichlorophenoxy acetic acid	0.01
Vinyl Chloride	0.002

Reg.22.425- Landfills In Boone And St. Joe Formations

(a) Applicability - The following are minimum design standards for Class 1 landfills that are located within the outcrop area of the Boone and St. Joe Formations. The design phase of a project must neutralize all limitations noted in the site characterization study through engineering modification or operating methods. The design of the containment structure must meet or exceed the minimum standards listed in these regulations.

(b) Separation Requirements -

(1) A minimum separation of ten (10) feet must be maintained between the bottom of the bottom liner system and the seasonal high water table surface.

(2) A minimum vertical separation of ten (10) feet must be maintained between the bottom liner and the highest point of the bedrock or pinnacles.

(3) All fill structures and operations must be above the one hundred (100) year flood elevation.

(c) Liner System -

(1) The minimum slope on the bottom liner must insure positive drainage of leachate after maximum loading and maximum expected strain.

(2) All bottom liner systems must consist of a double composite separated by a leak detection system. Each composite liner shall consist of an upper geomembrane liner (60 mil minimum thickness) directly overlying a low permeability soil layer, as described in Reg. 22.424(b).

(3) The soil and synthetic components of the composite liner must meet the requirements of Reg. 22.428.

(d) Leachate Collection System - The double composite liner system must have a leachate removal system directly overlying the upper composite liner. In addition to the requirements of Reg.22.429, the leachate collection and removal system must meet the following standards:

(1) The system must be designed such that leachate head above the primary composite liner does not exceed one foot under the most severe conditions anticipated.

(2) The drainage material must be free of organic and carbonate material, contain less than five percent (5%) by weight which passes the #200 sieve, have a minimum hydraulic conductivity of 1×10^{-3} and be a minimum of twenty-four (24) inches in thickness. Equivalent drainage nets or fabric may be used in lieu of the twenty-four (24) inch drainage layer provided a substitute protective layer is provided and the system provides an equivalent hydraulic conductivity to the twenty-four (24) inch layer.

(3) Leachate collection pipes must be incorporated into the drainage layer to convey liquid out of the landfill to storage tanks or a treatment system. The pipes must be a minimum of six (6) inches in diameter and must be chemically compatible with the leachate generated at the landfill and be structurally capable of supporting the maximum static and dynamic load anticipated from the overlying fill material and construction equipment.

(e) Leak Detection System - The double composite liner system must have a leak detection system located between the upper composite and the lower composite liners. The leak detection system must conform to the following standards:

(1) The minimum thickness of the coarse grained material must be 1 foot;

(2) Leak detection systems shall meet the standards for leachate collection system design and construction. A minimum hydraulic conductivity of 1×10^{-3} cm/sec must be obtained in the leak detection system material.

(3) An action leakage rate must be developed for the design and approved by the Department. If leakage rates exceed the action leakage rate, fill operations must cease and the Department must be notified. A written contingency plan must be developed for the facility which outlines steps and measures to be taken if the action leakage rate is exceeded.

(4) Daily records of fluid accumulation in the leak detection system must be maintained by the owner or operator.

(f) Final Cover Design - In addition to the requirements of Reg.22.1301, the top liner or cap of the landfill must be designed to minimize infiltration of storm water into the waste mass. The cover system design must incorporate the following minimum standards:

(1) A gas venting layer at least six (6) inches in thickness that meets the standards for leachate collection system design and construction having a minimum hydraulic conductivity of 1×10^{-3} cm/sec and no more than 5 percent by weight passing the #200 sieve, must be placed directly above the final lift of waste. Gas vent risers with slotted screen which extend at least 3 feet into the waste mass and fitted with a goose neck cap or equivalent to allow effective venting must be installed in the landfill. Vent spacing shall be a minimum of 1 per acre. The annular space in the gas vent risers must be backfilled with clean crushed stone to enhance gas migration from the venting layer to the riser.

(2) A composite infiltration barrier system shall be installed above the gas venting layer. The barrier system shall consist of two components; the upper component consisting of a minimum 30-mil flexible membrane liner (high density polyethylene shall be at least 60-mil thick), and the lower component consisting of at least a 18 inch layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. The flexible membrane liner component must be installed in direct and uniform contact with the compacted soil component. The composit cover system shall be designed and constructed in accordance with the requirements of Reg.22.428 except that the fines content of the barrier layer soil must be fifty percent (50%) or greater passing the #200 sieve. The barrier soil be free of large objects and must meet the following specifications:

(i) The barrier soil layer must have a Plasticity Index of greater than 10 percent.

(ii) Fines content of the barrier layer soil must be 50 percent or greater passing the #200 sieve.

(iii) Material greater than a #4 sieve must not compose more than 20 percent by weight of the soil.

(iv) No particles greater than 1 inch in diameter.

(3) A barrier protective layer must be placed directly over the barrier soil layer. This protective layer must be at least twenty four (24) inches in thickness and the lower 6 inches must be free of objects greater than 1 inch in diameter.

(4) A top soil layer of at least six (6) inches must be placed above the barrier soil protective layer. The top soil layer must be capable of sustaining vegetative growth over the landfill.

(g) Final Cover Slopes - Minimum slopes on the landfill cap shall be four percent (4%) or greater. Maximum slopes shall not exceed twenty-five percent (25%). Slopes greater than ten percent (10%) will require specialized erosion control measures which will ensure long term stability.

(h) Vegetative Cover - An appropriate grass cover crop must be established, during the recommended planting season, on completed portions of the landfill. The operating plan must contain a section describing in detail re-vegetation procedures.

(i) Drainage Filters - All granular drainage layers must be bounded above and below by geosynthetic liner or filters. The filter fabric must be compatible with leachate and landfill gas. The filters must allow free passage of gases and fluids while preventing clogging of the granular drainage layer.

(j) Alternative Designs - The Department may approve alternative designs proposals if determined by the staff to meet or exceed the minimum standards set forth above.

(k) Quality Assurance and Quality Control - A Quality Control and Quality Assurance Plan for liner and final cover construction must be developed in accordance with the requirements of Reg.22.428.

(l) Quality Assurannce - The permittee shall employ a third party engineering firm to insure proper construction of each component of the containment structure in accordance with the requirements of Reg.22.428.

Reg.22.426- Survey Control

(a) Applicability - Each facility shall develop and maintain a method of survey control as a means of insuring and documenting that the facility is developed in accordance with the permit drawings. Specifically, the site shall develop a grid coordinate system, that will allow facility features to be located in a three dimensional manner. The grid system shall be developed in accordance with the following guidelines.

(b) Survey Control Requirements - The grid system may be developed using assumed and not "true" reference directions (Ex. true north, mean sea level, etc.) if it is more convenient and workable. If assumed directions or elevations are used, then there should be some positive means developed to relate the site grid to an established grid coordinate system such as the State Plane Coordinate System or the Transverse Mercator System and to mean sea level.

(c) Benchmarks - At least three permanent points will be established from which the site grid can be referenced. Each permanent point must be located in areas where they are not likely to be disturbed. In the event that they are disturbed, then they shall be immediately re-established and the Department shall be notified. The grid, grid coordinate system, and reference points shall be shown on all permit drawings, cell as-built drawings and any modification submittals made to the Department.

(d) Grid Markers - Grid markers shall be established at positions to allow visual inspection of the progression of the fill and other features. The markers shall be mounted on steel posts, brightly painted, and placed in areas where they are not likely to be damaged or destroyed. Markers shall be identified consistent with permit drawing notations.

(e) Landfill Feature Location - Prominent landfill features shall be located and referenced to the approved site grid. At a minimum, the prominent features include:

(1) Property boundaries or corners;

(2) Monitoring wells and piezometers;

(3) Leachate risers, manholes and collection piping;

(4) Limits of refuse placement and perimeter of flexible membrane liner;

(5) Liner and cap top and bottom;

(6) Point source discharges;

(7) Gas monitoring facilities;

(8) Utility lines within fifty (50) feet of the disposal area; and

(9) Other features deemed significant by the operator or the Department.

(f) Limits of refuse placement and perimeter of flexible membrane liner shall be continuously staked according to the approved site grid system.

Reg.22.427- Surface Water Control

(a) Applicability - Each landfill shall design and implement a system to control surface water at the facility in a accordance with the minimum standards set forth in this section.

(b) Surface Water Control Requirements - Design of permanent and temporary drainage and runoff facilities and structures shall be documented in the operating or design narrative. Unless approved by the Department each facility shall be designed with a positive means of runoff and sedimentation control such as a sedimentation pond through which runoff from disturbed areas is routed. Runoff from active portions of the working face that has contacted the waste shall be considered leachate and shall be managed accordingly.

(c) Sedimentation Pond Discharges - Sedimentation pond discharges shall be permitted as required by the Department. Copies of discharge permits and monitoring reports shall be retained on site and be available to the Department for inspection.

(d) Erosion Control - The design shall also include berms, swales, benches, downchutes and other measures as appropriate on steep slopes to minimize erosion. In areas where flow quantity and velocity warrant, rip rap, gabions, revetments, or other protection shall be provided.

(e) Active Portion Runoff - The design narrative shall describe methods that the facility will use to minimize and control runoff from active portions of the landfill. The narrative shall also describe methods that the facility will utilize to segregate contaminated from uncontaminated runoff during fill activity.

(f) Final and Interim Slope Stabilization - The operating narrative shall describe seeding and soil stabilization methods on both interim and final slopes. In general, exposed slopes shall be seeded

or stabilized if it is anticipated that these slopes will not be disturbed for more than one growing season. More frequent seeding or stabilization may be required to prevent erosion of the cover system. The narrative shall also describe vegetative maintenance procedures and shall provide that vegetation shall be maintained in such a manner that vigorous growth is achieved.

(g) Use of Fertilizers, Pesticides, Herbicides, etc. - The use of fertilizers, soil mixtures, pesticides and herbicides shall be controlled to prevent pollution of surface and ground water.

Reg.22.428- Liner And Final Cover Design And Construction

(a) Quality Assurance Plans - Bottom, sidewall liners and final covers (both synthetic and clay components) shall be constructed in accordance with written quality assurance plans. The plan(s) shall be made a part of the operating narrative and detail quality assurance methods for all aspects of the completed construction. Site specific plans shall be developed based on the provisions of the Generic Construction Quality Assurance Plan for the Lining and Cover Systems Guidance Document dated September 1992. Copies of the generic plan may be received from the Solid Waste Management Division. Facilities may, at their option, adopt the generic plan, develop a site-specific plan that incorporates the generic plan provisions, or adopt the generic plan with certain express site specific modifications. At a minimum, quality assurance plans shall incorporate the specifications described herein.

(b) Liner Material Compatibility - Liner materials and components must be chemically compatible with and resistant to the expected waste, leachate and/or soil characteristics.

(c) Soil Liner Material Criteria - Soil components of liners, final covers and testing of soil components shall meet the following minimum specifications:

(1) Fines content of soil (material passing a #200 sieve) shall be greater than 30 percent.

(2) The soil must be classified as either CL, CH, or SC and should have a Plasticity Index (PI) greater than 10.

(3) Material greater than #4 sieve must compose less than twenty percent (20%)of soil by weight with no particle sizes greater than 1.0 inch in diameter.

(4) Soil clod size must be less than four (4) inches in diameter.

(5) The soil component of the composite liner system and final cover barrier layers must have a hydraulic conductivity (K) of 1×10^{-7} cm/sec or less as measured by undisturbed hydraulic conductivity test, and installed and compacted at a minimum of 90% Standard Proctor maximum dry density at a moisture content above optimum as determined by ASTM D698 or equivalent modified proctor or other demonstration of adequate shear strength and compressibility using geotechnical laboratory testing methods.

(6) Pre-construction testing shall be conducted at the rate of one test per every 20,000 cubic yards of liner or final cover barrier material or more frequently if visual observations indicate a change in material characteristics. Tests shall be conducted in a manner to correlate compaction effort to permeability. Tests shall include:

(i) Moisture Content (ASTM D854)

(ii) Particle Size (ASTM D1140, D422)

(iii) Atterburg Limits (ASTM D4318)

(iv) Laboratory Compaction (ASTM D698)

(v) Laboratory Hydraulic Conductivity at a specified compaction (ASTM D5084)

(7) Construction testing on soil hauled for liner or final cover placement shall be conducted at a rate of one test set every 5,000 cubic yards of material used in the construction of the liner, or more frequently if visual observation indicate a change in material or if otherwise indicated herein. In addition to the test shown below, the liner shall be monitored to insure bonding between lifts and that the specified lift thickness is being achieved. Tests shall include:

(i) Moisture Content (ASTM D854)

(ii) Particle Size (ASTM D1140, D422)

(iii) Atterburg Limits (ASTM D4318)

(iv) Laboratory Compaction (ASTM D698)

(v) Laboratory Hydraulic Conductivity at a specified compaction (ASTM D5084)

(8) Field testing of the completed liner or final cover barrier shall be conducted at the rate of one test set every 10,000 ft^2 of liner constructed per compacted lift and shall include:

(i) In Place Field Density/Moisture Content (ASTM D2922)

(9) Performance testing on undisturbed field samples shall be conducted at the rate of one test every 40,000 square feet of liner or final cover barrier constructed per compacted lift and shall include:

(i) Hydraulic Conductivity Testing (ASTM D5084)

(10) Liner or final cover barrier penetrations resulting from performance testing will be repaired using bentonite clay or other manner approved by the certifying professional. Constructed liner should be rolled, wetted or protected in order to prevent desiccation and freeze/thaw damage.

(11) Test fills (section II, subsection 3 of the generic plan) will be required prior to the construction of the clay lined area at a facility meeting the requirements of this section. Where the facility or an earth work contractor has successfully completed and documented a minimum of 500,000 square feet of clay liner or final cover barrier construction consistent with the requirements of this section during the last three (3) years, the owner or operator may submit a written request to the Department to waive the test fill requirements of this section.

(d) Geomembrane Testing -

(1) Prior to delivery, the geomembrane manufacturer shall provide conformance testing results demonstrating that the material meets the required specifications and shall certify that the results are guaranteed.

(2) Conformance Testing (1 test set every lot or every 100,000 ft^2 whichever is greater). Material lots found not in conformance will be rejected.

(i) Density (ASTM D1505) or Specific Gravity (ASTM D792, Method A)

(ii) Carbon Black Content (ASTM D1603)

(iii) Carbon Black Dispersion (ASTM D3015)

(iv) Thickness (ASTM D1593)

(v) Tensile Properties (ASTM D638)

(vi) Tear Resistance (ASTM D1004, Die C)

(3) Seam Testing -

(i) Trial seams tested in field tensiometer or at testing laboratory at the beginning of every day and every 4 working hours.

(ii) Air pressure and vacuum testing of all field seam lengths.

(iii) Destructive testing every five hundred (500) feet of seam length in laboratory of strength and peel adhesion (ASTM D4437).

(e) Quality Assurance for Incidental Items - Quality assurance procedures for other materials deployed in the construction, such as geotextiles, geonets, geosynthetic clay liners, granular drainage blankets, etc., shall also be included in the written QA plans. The above requirements are only intended to act as minimum values and will not relieve the facility of the burden to prepare a site specific quality assurance plan.

(f) Department Notification of Construction Schedule - When the liner or final cover construction activity has been substantially planned, the Department shall be notified of the tentative construction schedule. The notification should include the area to be constructed, and the names of the contractors and certifying professional. If the facility is to construct a test fill (see subsection (b)(11) of this section), this date shall also be provided with the notification.

(g) Third Party CQA Firm - Construction quality assurance (CQA) shall be provided by an independent third party. If the certifying firm or individuals have any relationship with the owner or operator of the facility which could be interpreted as a conflict (such as belonging to a firm under the same corporate umbrella), these should be disclosed in advance of the construction.

(h) Required Presence - A qualified member of the CQA firm should be present at the site continuously during liner or final cover barrier construction. The professional certifying the

construction shall at a minimum visit the site at least once prior to construction, once during construction, and once after construction is substantially completed unless such visits are not practical. Additional visits by the professional certifying the construction shall be required if additional visits are prescribed in the approved Quality Assurance Plan or if site conditions warrant.

(i) Certification Reports - Construction shall be documented in the form of a certification report prepared by a professional engineer registered in the State of Arkansas. The report shall include summaries of all construction activities, testing data sheets and summaries, sample location plans, construction problems and solutions, changes from design and material specifications, and a summary statement signed and sealed by the certifying professional. The report shall include "as-constructed" or record drawings (to a scale no larger than 1'=100') of the disposal area which identify at a minimum:

(1) The limits of liner or final cover barrier construction;

(2) The top and bottom liner or final cover barrier elevations at 50' intervals referenced to the site grid coordinate system;

(3) If a granular drainage blanket is utilized in the design, top of blanket elevation should be identified at 50' elevations;

(4) The location and elevation of slope breaks, leachate piping, leachate sumps and trenches, berms, and any other features which are material to the disposal area construction;

(5) A key map showing the location of the construction in relation to the permitted design, along with an identification of areas previously constructed and areas yet to be constructed;

(6) Compaction and permeability testing locations; and

(7) If necessary to document leachate head level compliance (subsections (a)(2) and (g)(6) of this section), the report should also indicate the lowest point of the liner constructed not including leachate trenches and sumps.

(8) In addition, the certifying professional shall make a statement that the cell was constructed in accordance with the permit drawings and narrative. The report should also include a list of any deviations from the permitted drawings, if they exist, and reasons for the deviations.

(j) Certification Report Approval - The report shall be submitted to the Department for review and approval prior to the commencement of disposal activities in the newly constructed area. If no notice to the contrary is received by the owner or operator within 14 days after receipt by the Department of the report, the report shall be deemed to be acceptable and disposal operations may commence.

(k) Changes to the Approved Design – The Department shall approve all proposed changes to the approved design and/or material specifications prior to construction.

Reg.22.429- Leachate Collection System Design And Construction

(a) System Requirements - Leachate collection systems shall be designed and installed to facilitate dewatering of the waste mass and disposal area. The systems shall be designed to limit the maximum leachate head on the bottom liner at any point at any time to 30 cm (12 inches) or less. The system shall also be designed to facilitate maintenance.

(b) Drainage Layer - The leachate collection system shall consist of a permeable drainage layer with a minimum hydraulic conductivity of 1×10^{-3} cm/sec or greater over the top of the liner system with a system of pipes and trenches at lower portions of the disposal areas which transmit leachate to a point or location for removal. The system shall include provisions for the rapid removal and storage of leachate such as storage tanks, ponds, or treatment facilities. Loading or discharge stations shall be provided as necessary.

(1) Granular materials used in the leachate collection system shall be free of organic material, and contain less than five percent (5%) by weight which passes the #200 sieve. The use of carbonate rock for leachate collection systems should be avoided, especially where low pH leachates are anticipated.

(2) Alternative drainage layer materials or conductivites may be approved upon adequate demonstration that the drainage layer will otherwise meet the requirements of this section.

(c) Collection System Design and Documentation - The plans and design narrative should fully show and describe the leachate collection system and method of management. Calculations or demonstrations should be provided to show that the collection system will adequately dewater the waste mass and that clogging of the system will not occur.

(d) Collection Pipe Design - Leachate collection pipes shall be minimum six (6) inches in diameter, must be chemically compatible with leachate and structurally capable of supporting the maximum static and dynamic load anticipated from the overlying fill material and construction equipment and it shall be demonstrated that the pipe has sufficient strength to resist crushing. Perforations shall be designed so as to minimize clogging. The pipe shall be laid on a sufficient slope to insure adequate flow to the riser or manhole after consideration of potential future settling or consolidation of the landfill bottom.

(e) Leachate Manhole/Riser Design - Leachate collection manholes or risers shall be located to prevent potential damage by landfill equipment. Manholes and risers will be constructed from materials of sufficient thickness to prevent crushing or deformation due to uneven loading during landfilling operations. Penetration of the liner system by leachate collection pipes is discouraged. If it is necessary to extend leachate collection pipes through a liner system, the methods used to seal the penetration must be described and detailed.

(f) Existing Leachate Removal Systems - The requirements of this paragraph apply to the operation and upgrades of leachate removal systems installed prior to the effective date of this regulation. The design of new systems shall be in accordance with paragraph (g).

(1) General Requirements - A positive method of leachate extraction shall be provided from the collection system in order to assure compliance with the head limitations of paragraph (a) of this section.

(2) Automatically activated pumps with pre-set elevations to turn the pumps on and off are preferred but not required. Manually activated pumps or pumping systems may be used if some means to measure and limit leachate head level is approved and implemented. If the facility can not demonstrate that it can consistently maintain the required head level, automatic pumps shall be installed.

(3) The facility shall address operation of the leachate collection system during the postclosure period in the facility design and operating narrative. While an automatic system may not be required during the active phase, it may be required during the post closure phase.

(4) Any modification of the removal systems or equipment replacement after the effective date of this regulation shall be in accordance with the requirements of paragraph (g).

(g) New Leachate Removal Systems - The requirements of this paragrapgh apply to leachate removal systems installed after the effective date of this regulation.

(1) General Requirements - A positive means for the rapid removal of leachate from the collection system shall be provided to assure compliance with the head limitations of paragraph (a) of this section. Leachate removal systems, whether gravity flow or pumped flow systems, shall be designed for the anticipated peak flow. Failure alarm systems, back-up equipment, and contingency plans shall be provided as necessary to assure reliability.

(2) Gravity Flow Systems - Where the design provides for gravity flow of leachate from the collection system to storage tanks or treatment units, adequate peak flow storage shall be provided to assure continual removal of leachate. Visual high water alarms on the tank may be required and at least two days peak flow storage should be provided above the high water alarm.

(3) Pump Systems - Where the design provides for pumping of leachate from the collection system to storage tanks or treatment units, pumps shall be designed to handle the anticipated peak flow. Dual, alternating pumps installed in the wetwell are required, or for small systems, a portable back-up pump may be provided. Visual high water alarms shall be provided.

(4) Storage Tanks - Tanks shall be provided with adequate peak and reserve storage for the expected removal frequency. A means to easily measure daily leachate levels shall be provided as well as visual high water indicator or alarm system.

(5) Safety and Maintenance Features - Automatic systems should be designed with alarms and trouble lights to indicate the need for servicing, as well as automatic cut off devices to prevent overfilling of storage tanks and to prevent pumps from running dry unless they are designed to run dry. Sufficient spare parts should be maintained at the site or contingency plans should be made in the event of failure.

(h) Secondary Containment Outside Lined Areas - Storage tanks and piping external to the lined area should be provided with secondary containment. Storage ponds must be lined similar to the

disposal area. If storage ponds are utilized, some means of aeration should be provided to prevent odors.

(i) On-site Leachate Treatment - If the owner or operator proposes to treat leachate on-site prior to disposal, the treatment system design shall be submitted for approval. The owner or operator shall demonstrate that the facility has the appropriate discharge permits.

(j) Certification - Construction of leachate collection systems shall be certified in the same manner as liner or cover systems. Construction documentation may be submitted with the liner construction documentation report Reg.22.428(i). "As constructed" features for leachate collection systems shall be included with other cell construction features in the liner certification report and shall include the following:

(1) Leachate collection pipe size, type, horizontal and vertical locations, and slope;

(2) Leachate collection trench and sump locations with elevations;

(3) Manhole or riser locations with top and invert elevations;

(4) Leachate pump station locations and elevations of the bottom of the wet well, inlet invert, pump on, and pump alarm;

(5) Location and description of leachate storage tanks and other handling facilities; and

(6) In addition, the certifying professional shall certify that the leachate system was constructed in accordance with the permit drawings and narrative.

(k) Leachate Management and Disposal - The narrative shall also describe the proposed means of leachate management. The narrative shall describe the method(s) of disposal and include the following:

(1) If disposal is to a sanitary sewer system either by trucking or a direct connection, the receiving system must have the means to evaluate the effect of the discharge to insure that it will not inhibit or disrupt either it's collection or treatment system. Copies of new or revised permits should be included with engineering inspection reports.

(2) If a facility proposes to use leachate recirculation as its primary means of leachate management, it shall also obtain an agreement with a disposal facility in the event that recirculation does not prove effective.

(3) If leachate recirculation is the proposed management method, the facility shall, in addition to meeting the requirements of Reg.22.420, describe in detail how leachate will be removed and re-introduced into the waste mass. The description shall include temporary storage facilities, the specific means and control methods for incorporating the leachate into the waste mass, odor control methods, and worker protection measures. In addition, contingency plans as described in paragraph (2) of this subsection shall be provided.

(4) Leachate may be land applied only after express approval or permitting by the Department and provided that the applicant can demonstrate a beneficial use resulting from the practice.

(l) Leachate Screening and Monitoring - Each landfill required to install leachate collection systems shall test representative samples of leachate for each of the ground water monitoring parameters required under Chapter 12, Ground Water Monitoring and Corrective Action or by permit conditions. Sampling parameters, frequencies and locations shall be determined based on the character and quantity of leachate produced and the following requirements.

(1) Sampling Parameters - The initial sampling parameters shall include:

(i) Appendix 1 constituents for Class 1 landfills;

(ii) Appendix 2 constituents for landfills required to implement an assessment monitoring program pursuant to Reg.22.1205;

(iii) Appendix 3 constituents for Class 3 landfills or an appropriate subset of constituents based on waste characteristics data; or

(iv) An appropriate subset of constituents selected from Appendix 1 for other facilities required to monitor leachate quality.

(2) Adjustment to Sampling Parameters - The Director may approve the deletion of sampling parameters where analytical data indicates a constituent has not historically been detected and is not reasonably expected to be present in the leachate, however, periodic re-sampling for the full constituent list may be required to confirm consistent leachate characteristics.

(3) Sampling Frequency - The initial sampling frequency shall be at the same frequency required under Chapter 12 for ground water monitoring. Sampling frequency may be adjusted as follows.

(i) If the owner or operator is required to implement an assessment monitoring program, quarterly sampling of leachate shall be performed for the first year of the assessment monitoring program.

(ii) The Director may decrease the sampling frequency where historical data indicates little variation in the concentration of detected constituents.

(4) Sampling Locations - Sampling locations shall be selected that will produce representative samples of the leachate quality generated by the landfill.

(m) Leachate Disposal Testing - Leachate testing requirements shall be determined by the Department based on the character and quantity of leachate produced and the ultimate disposal method.

(1) Where disposal of leachate is to a publicly owned treatment works, leachate disposal testing requirements shall conform to any Department approved pretreatment programs and procedures.

(2) Prior to acceptance of leachate for treatment, publicly or privately operated treatment works that are not required to implement and operate pretreatment programs shall obtain Department approval. Treatment works operators shall demonstrate that:

(i) The facility is permitted under the National Pollutant Discharge Elimination System and that acceptance of the leachate would be in compliance with permit provisions;

(ii) Adequate treatment capacity and capability is available; and that

(iii) An adequate testing program is in place to assure that only nonhazardous leachate is accepted for treatment and disposal and the leachate is of a concentration and character that is amenable to treatment.

(3) If leachate recirculation is the primary management means, the facility shall perform at a minimum an annual Toxicity Characteristic Leaching Procedure analysis of the recirculated leachate. Leachate exhibiting hazardous characteristics as defined by Regulation 23, Hazardous Waste Management, when not recirculated as described in (k) (3) above and Reg. 22.420, shall be managed and disposed of as a hazardous waste in accordance with Regulation 23.

(n) The requirements of this section are considered minimum requirements only. Special cases not addressed by this section may be considered by the Department on a case by case basis and the Department reserves the right to request additional testing if necessary to protect human health and the environment.

Reg.22.430- Earthwork Balance

(a) Quantity Summaries - The narrative shall include a tabulation of excavation and material quantities required to construct the facility as designed. The tabulation descriptions shall correlate with plan cross sections (e.g. clay liner, barrier layer, etc.) and list all off-site borrow areas necessary to provide an adequate quantity and quality of the various materials. The purpose of the tabulation shall be to demonstrate that the site contains sufficient quantities and types of material to construct the facility or where deficiencies or shortfalls will be obtained. This section sets forth the minimum information to be provided.

(b) Tabulated Items - Excavation quantities along with the anticipated amounts that will be suitable for clay liner and final cover construction shall be provided along with the amount of material available for daily and intermediate cover. Also included shall be the quantities required for clay liner and final cover construction, along with gross and net airspace figures and an estimation of the amounts of daily and intermediate cover material that will be required.

(c) Material Stockpiling - In the event that the phasing of operations will require long-term (generally greater than one year) stockpiling of materials, this shall be discussed fully in the operations narrative and the plans shall designate material stockpiling locations. Best Management Practices in accordance with Reg.22.411(h) shall be implemented at all stockpile locations and general procedures for the temporary stockpiling of soil required by routine operations shall be discussed in the operating narrative.

(d) Deficiencies - In the event that the amount of excavated material does not yield sufficient quantities of any material types, the narrative shall describe the deficiency and where the additional material will be obtained.

(e) Borrow Areas - In the event that the facility proposes to obtain "borrow" material from a designated source outside of the disposal area for liner or cover construction, daily operations, or any other use, the narrative shall include a description of the methods that will be used to control erosion at the borrow area. Best Management Practices as described in Reg.22.411(h) shall be implemented on an on-going basis at borrow areas.

(f) Borrow Areas Reclamation - All borrow areas owned or leased by the owner or operator shall be reclaimed in accordance with Regulation 15 of the Commission and the requirements of this paragraph. Final reclamation may include, but may not be limited to elimination of vertical or near vertical cut banks (high walls), construction of final side slopes to three horizontal to one vertical (3:1) or flatter, grading the site to properly drain, and establishing permanent vegetation cover to fully stabilize the site. The Director may approve alternative borrow reclamation plans depending upon site topography, soil types and conditions, site geology, and the intended land use of the site following reclamation.

Reg.22.431- Landfill Configuration

(a) Applicability - This section applies to the design and operation of all landfills.

(b) Slopes - Finished grades of the landfill cap shall be selected to minimize standing water and erosion. The design shall at a minimum consider the potential ultimate settlement of the waste mass, the erodibility of the soil cover, and the slope stability. Slopes shall not be less than 4% or more than 25%. For sites having greater natural slopes, a 33% slope may be considered if terracing is incorporated into the design.

(c) Ground water - A minimum of five feet of separation shall be maintained between the top of the landfill liner system and the seasonally high ground water elevation unless approval is obtained from the Director for a landfill that is designed to maintain a positive inward ground water flow gradient.

(d) Bedrock - A minimum of two feet of separation shall be maintained between bedrock and the top of the landfill liner system including the liner thickness.

Reg.22.432- Other Requirements

Chapter References - Applicants, permittees, owners or operators shall also refer to applicable provisions of Chapter 11 Geotechnical and Hydrogeological Investigations, Chapter 12 Ground Water Monitoring and corrective action, Chapter 13 Closure and Post-Closure Care, and Chapter 14 Financial Assurance Criteria, for additional requirements.

Chapter 5 Class 3 Landfills

Reg.22.501- Location Restrictions

(a) Responsibility of Applicant - Applicants for a permit for a solid waste disposal, collection and processing facilities shall be responsible for selection of the proposed site subject to the provisions of this Reg.22.502 through Reg.22.509.

Reg.22.502- Airport Safety

(a) Putrescible Waste Facilities - This section applies only to Class 3 landfills that dispose of or propose to dispose of putrescible wastes. A facility or practice disposing of putrescible wastes that may attract birds and which occurs within 10,000 feet (3,048 meters) of any airport runway end used by turbojet aircraft or within 5,000 feet (1,524 meters) of any airport runway end used by only piston-type aircraft shall be designed and operated in a manner that will not pose a bird hazard to aircraft.

(b) Demonstration for New and Expanded Landfills - Applicants for new landfills and expansions to the area permitted for waste disposal that are located within the distances specified in paragraph (a) must demonstrate to the Department that the units are designed and will be operated such that the landfill will not pose a bird hazard to aircraft.

(c) FAA Notification - Owners or operators proposing to site new landfills and expansions to the area permitted for waste disposal that dispose of putrescible wastes located 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) and furnish proof of notification.

(d) Operating Requirements for All Facilities - Owners or operators of all solid waste disposal and processing facilities and practices located within the distances specified in paragraph (a) above shall be operated in a manner that does not pose a bird hazard to aircraft.

Reg.22.503- Floodplains

(a) Applicability - Solid waste facilities shall be designed and operated in manner that will not restrict the flow of the base 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 and the environment.

(b) Demonstration Requirements - Applicants for new solid waste landfills and expansions to the area permitted for solid waste disposal shall demonstrate to the Department that the facility is in compliance with the criteria of paragraph (a).

Reg.22.504- Wetlands

(a) Applicability - New Class 3 landfills, expansions to the area permitted for waste disposal, and portions of the permitted area which have not been constructed, shall not be located in wetlands unless the owner or operator can make the demonstration in Reg. 22.404 to the Director.

Reg.22.505- Fault Areas

(a) Applicability - New Class 3 landfills and expansions to the area permitted for waste disposal shall not be located within two hundred (200) feet (60 meters) of a fault that has had displacement in Holocene time unless the owner or operator demonstrates to the Director that an alternative

setback distance of less than two hundred (200) feet (60 meters) will prevent damage to the structural integrity of the unit and will be protective of human health and the environment.

Reg.22.506- Seismic Impact Zones

(a) Applicability - New Class 3 landfills and expansions to the area permitted for waste disposal shall not be located in seismic impact zones, unless the owner or operator demonstrates to the Director 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.

Reg.22.507- Unstable Areas

(a) Applicability - Owners or operators of new Class 3 landfills and expansions of the area permitted for waste disposal must demonstrate that engineering measures have been incorporated into the unit's design to ensure that the integrity of the structural components of the unit will not be disrupted. The owner or operator 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).

Reg.22.508- Separation Distances And Buffer Zones

(a) New Facilities and Expansions - Applicants for new Class 3 landfills and expansions to the permitted area shall comply with the following minimum separation distances and buffer zones as measured from the proposed active portion of the landfill:

(1) Five hundred (500) feet of an existing well or water intake used as a drinking water source as determined at the earliest date the notification or application is made to local or regional authorities as required by Reg.22.201, Reg.22.202 or Reg.22.203 as applicable;

(2) Three hundred (300) feet of an existing dwelling, unless owned by the applicant, as determined at the earliest date the notification or application is made to local or regional authorities as required by Reg.22.201, Reg.22.202 or Reg.22.203 as applicable; and within

(3) One hundred (100) feet of the property boundary.

(b) Existing Landfills - Existing landfill areas that were designed and permitted by the Department prior to May 7, 1995 for waste disposal are exempt from the requirements of paragraph (a) above. Expansions to the permitted area and the design of new landfill units after May 7, 1995 shall conform with buffer zone width requirements.

(c) Construction in the Buffer Zone - No permanent construction of any kind shall occur in the buffer zone other than fencing, access roadways and monitoring well construction. Landscaping for esthetics is encouraged in the buffer zone and may be required by the Department for individual

sites. Where appropriate landscaping for esthetics is undertaken, pay stations, administration buildings, parking, run-on and run-off control systems and other facilities may be permitted in the buffer zone area.

(d) Proximity to Highways - Except as otherwise may be provided under regulations promulgated by the State of Arkansas Highway and Transportation Commission, landfills shall not be established, operated, or maintained within one thousand (1,000) feet of the nearest edge of the right-of-way of any interstate, primary or other state highway designated by the Highway and Transportation Commission unless the landfill is screened by natural objects, plantings, fences, or other appropriate means so as not to be visible from the main-traveled way of the highway.

(e) Local Zoning - Nothing contained herein shall be construed to limit or interfere with local zoning requirements and ordinances pertaining to the operation of solid waste facilities or regional solid waste management district rules. The criteria set forth in this section is intended solely as minimum criteria for facilities located on lands where land use is not regulated by local authorities. Requirements herein do not relieve the applicant from complying with any more restrictive or comprehensive local or regional zoning rules or requirements.

Reg.22.509- Endangered Species

(a) Applicability - This section applies to existing landfills, new landfills, and expansions to permitted facilities.

(b) Species Threat - Solid waste facilities and practices shall not cause or contribute to the taking of any endangered or threatened species of plants, fish, or wildlife.

(c) Habitat Threat - The facility or practice shall not result in the destruction or adverse modification of the critical habitat of endangered or threatened species as identified in 50 CFR Part 17.

Reg.22.510- General Operating Requirements

(a) Conformance with Permit Documents - All operations at the landfill shall be in accordance with the requirements of this Chapter, the permit and the approved plans and operating plan and narrative.

(b) Operator Licensing Requirements - All operations shall be performed by licensed on-site operators at all times who are certified in accordance with Regulation Number 27 of the Pollution Control and Ecology Commission.

(c) Working Face Size - Unloading shall be supervised and dumping shall be confined to the smallest practical area. Multiple working faces shall not be allowed unless specifically approved in the facility operating plan.

(d) Waste Spreading and Compaction - As rapidly as solid waste is unloaded for disposal, it shall be spread and compacted in accordance with the approved operating plan and covered in accordance with the requirements of Reg.22.512.

(e) Salvage Operations - A salvage operation may be approved by the Department under the following conditions:

(1) An area has been designated by the permittee for the recovery of salvageable material.

(2) The operations shall not interfere with or otherwise delay the activities of the work face.

(3) The recovery of salvageable material must be conducted in an orderly manner.

(4) All salvaged materials shall be removed from the landfill site daily, or properly stored so that they will not create a nuisance or unsightly appearance.

(f) Prohibited Activities - The following activities shall be prohibited in conjunction with or upon the site of the landfill:

(1) Any scavenging of materials as defined herein;

(2) Any feeding of farm or domestic animals;

(3) Depositing waste in standing water; and

(4) Open burning as defined herein.

(g) Litter Control - Litter control provisions shall be maintained at all times. If daily or more frequent cover does not control on and off site litter, other methods may be required, such as, but not limited to, litter fences and litter crews.

(h) Additional Surface Water Controls and Best Management Practices - In conjunction with and in addition to the requirements of Reg.22.517, Reg.22.518, Reg.22.527, and Reg.22.530 the owner or operator shall:

(1) Contour the surface of the working portion of the landfill to minimize surface water run-on or flow into or through the working face; and

(2) Install, construct, repair and maintain controls to prevent off-site sediment accumulation at all landfill, soil stockpile, and borrow site areas. Temporary and permanent seeding, grading, diking, terracing, diversion ditches, silt fencing, silt traps, vegetation filter strips, mulching, erosion control blankets and matting, gravel filter berms, check dams, riprap, sediment ponds and other best management practices for erosion and sediment control shall be provided as necessary. Best management practices for the site shall be in accordance with any stormwater permit issued for the site, shall be described in the operating narrative, and shall be included in the permit plans as appropriate.

(3) Final and interim slope stabilization must conform with Reg.22.427(f).

(i) Final Cover Vegetation Maintenance - After permitted final grades have been attained and a final cover system installed, a cover of suitable perennial vegetation shall be established to prevent erosion of cover soils. The vegetative cover shall be mowed at least annually or as needed to control the growth of undesirable annual weeds and woody vegetation, and to allow for inspection of the integrity of the cover system.

(j) Equipment Requirements - The owner or operator shall have provisions for the routine maintenance of equipment at the landfill. Adequate backup equipment shall be available within 24 hours in the event of breakdowns.

(k) Communications and Emergency Response - The owner or operator shall have an adequate telephone communication system in the event of fire or other emergency situations that may arise at the landfill and a written emergency response plan shall be maintained at the site.

(l) Employee Facilities - Except where the landfill is located at an industrial site where employee facilities are readily available, the owner or operator shall have an on site building/office with a potable water supply and sanitary facilities for site personnel.

(m) Nuisance Avoidance - The owner or operator shall operate the landfill in a manner to avoid creating a public nuisance or public health hazard. The Department may require any additional information or action deemed necessary to assure an environmentally safe operation of the facility.

(n) Maintenance of Cover Systems - The owner or operator shall be responsible for maintaining the cover system integrity and shall promptly repair erosion, washout, tracking, or other defects that result in exposed refuse in daily or intermediate cover or in the exposure of the infiltration barrier layer of the final cover system. Areas of leachate seepage, or areas exhibiting evidence of leachate seepage such as staining and discoloration of the cover system shall also be promptly repaired.

(o) Wet Weather Repairs - Due care shall be exercised in performing repairs during wet weather conditions to prevent the creation of additional cover defects. Prompt temporary measures shall be implemented in such cases until permanent repairs and remedies can be implemented.

Reg.22.511- Procedures For Excluding The Receipt Of Hazardous And Unauthorized Waste

(a) Program Requirements - Owners or operators shall implement a program at the facility for detecting and preventing the disposal of regulated hazardous wastes and polychlorinated biphenyls (PCB) wastes as defined in Regulation Number 23 and all additional unauthorized wastes.

(1) Class 3 Commercial landfills shall comply with the requirements of Reg.22.412 pertaining to procedures for excluding the receipt of hazardous waste and other unauthorized wastes for Class 1 landfills.

(2) Class 3 Noncommercial landfills shall develop a program in accordance with the requirements of this section. The program shall be submitted to the Department and shall be placed in the operating record.

(b) Contents of Class 3N Exclusion Plan - The Owner or operator of all Class 3 Noncommercial landfills shall develop, implement, and maintain a written plan for hazardous and other unauthorized waste exclusion to demonstrate compliance with this section. The plan shall include at a minimum:

(1) A description of the proposed monitoring program and responsibilities of facility personnel that will ensure that incoming loads do not contain regulated hazardous wastes, PCB wastes or additional unauthorized wastes;

(2) Methods to identify and screen potentially hazardous and additional unauthorized wastes before it enters the landfill including if applicable, the review of procedures for separating hazardous waste and other unauthorized waste from other wastes;

(3) Random inspection procedures, documentation of inspections, and maintenance of records or test results made to ensure compliance;

(4) A contingency plan and description of remedial actions to be taken when hazardous or unauthorized waste is identified in the Class 3 waste stream.

(5) Notification of the Director if a regulated hazardous waste, PCB or other unauthorized waste is discovered in the landfill.

(c) Separation of Other Unauthorized Wastes - Class 3 landfills shall develop and follow Department approved operating procedures to prevent the disposal of or provide for the separation of unauthorized waste from the approved Class 3 waste stream. Suitable containers, vehicles, or transfer capability shall be provided at the landfill site or the industrial facility for the proper removal and disposal of unauthorized waste.

Reg.22.512- Cover Material Requirements

(a) Daily Cover - The owners or operators of all Class 3 Landfills must cover disposed solid waste with 6 (six) inches of earthen material at the end of each operating day, or at more frequent intervals if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging and to limit the generation of leachate.

(b) Intermediate Cover - A compacted layer of cover soil of sufficient quantity to ensure there is not exposed waste, but not less than twelve (12) inches including the six (6) inches of daily cover required under Reg.22.512(a), shall be applied upon surfaces that will not receive an additional application of waste or final cover within thirty (30) days.

(c) Alternative Cover Materials - Alternative cover materials of an alternative thickness (other than at least six inches of earthen material) may be approved by the Director, either through individual requests or through generalized Department approval upon demonstration that the alternative material and thickness controls disease vectors, fires, odors, blowing litter, and scavenging without presenting a threat to human health and the environment.

(d) Alternative Cover Frequency - The Director may approve alternative frequencies for the application cover materials, including the approval of a waiver of daily and intermediate cover material requirements, if the owner or operator demonstrates that less frequent or no cover will adequately meet the requirements of this section.

(e) Temporary Waiver - The Director may grant a temporary waiver from the requirements of this section if the owner or operator satisfactorily demonstrates that extreme conditions exist that make meeting such requirements impractical. Failure of the operator to stockpile adequate cover material shall not constitute justification for a waiver under this paragraph.

Reg.22.513- Disease Vector Control

(a) Applicability - Owners or operators of all permitted facilities must prevent or control on-site populations of disease vectors using techniques appropriate for the protection of human health and the environment.

Reg.22.514- Explosive Gases Control

(a) Applicability - The concentration of explosive gases generated by the facility shall not exceed:

(1) Twenty five (25) percent of the lower explosive limit (LEL) for the gases in facility structures (excluding gas control or recovery system components); and

(2) The lower explosive limit for the gases at the facility property boundary.

(b) Class 3 Commercial Monitoring Program - Owners or operators of all Class 3 Commercial landfills must implement a routine methane monitoring program to ensure that the standards of paragraph (a) of this section are met. The program shall meet the requirements of Reg.22.415

(c) Class 3 Noncommercial Monitoring Program - Owners or operators of all Class 3 Noncommercial landfills shall not be required to implement a routine methane monitoring program unless the Director determines that:

(1) The nature and quantity of waste poses a significant potential for the generation of explosive gases; or

(2) Explosive gases have been detected in concentrations exceeding the standards identified in paragraph (a).

The monitoring program, if required, shall meet the requirements of Reg.22.415.

Reg.22.515- Air Criteria

(a) Applicability - Owners or operators of all permitted facilities must ensure that the units 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) Burning Prohibition - Open burning of solid waste, except for the infrequent burning of agricultural wastes, silvicultural wastes, landclearing debris, diseased trees, or debris from emergency clean-up operations and ordinance that may be allowed by the Arkansas Air Pollution Control Code, is prohibited at all units.

(c) Fire Safety - A facility or practice shall not pose a hazard to the safety of persons or property from fires. This may be accomplished through compliance with this section and through the periodic application of cover material or other techniques as appropriate.

Reg.22.516- Access Requirements

(a) Applicability - Owners or operators of all permitted facilities must control public access and prevent unauthorized vehicular traffic and illegal dumping of wastes by using artificial barriers, natural barriers, or both, as appropriate to protect human health and safety and the environment.

(b) Required Facilities - The site shall be adequately fenced with an entrance gate that can be locked or demonstrate that other methods have been employed to prevent unauthorized access to the site. Class 3 Commercial landfills shall provide a sign showing the name of the facility, permit number, emergency telephone number, opening and closing hours and days of operation posted at the entrance to the facility.

(c) Access and Operational Roads - All weather operational roads shall be provided for vehicle movement within the site. The roads shall be of such construction quality to allow easy access in all weather conditions to all portions of the active disposal site and to other operational areas where all weather access is necessary to achieve timely compliance with permit requirements.

(d) Hours of Access - Access to the site shall be permitted only during the hours when operating personnel are on the site.

Reg.22.517- Run-On/Run-Off Control Systems

(a) Class 3 Commercial Requirements - Class 3 Commercial landfills shall design, construct and maintain run-on and run-off control systems meeting the requirements of Reg. 22.418 for Class 1 landfills.

(b) Class 3 NonCommercial Requirements - At a minimum, Class 3 Noncommercial landfills shall design, construct, and maintain:

(1) A run-on control system to prevent flow onto the active portion of the landfill or waste processing area during the peak discharge from a 24-hour, 10-year storm;

(2) A run-off control system from the active portion of the landfill or waste processing area to collect and control at least the water volume resulting from a 24-hour, 10-year storm if required by the Department to meet the requirements of Reg. 22.518.

(3) Best management practices for pollution prevention shall be implemented at all sites to control the release of sediment and waste from the site.

Reg.22.518- Surface Water Requirements

(a) General Requirements - All Class 3 landfills shall not:

(1) Cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act, including, but not limited to, the National Pollutant Discharge Elimination System (NPDES) requirements, pursuant to Section 402 of the Clean Water Act;

(2) Cause the discharge of a nonpoint source of pollution to waters of the United States, 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;

(3) Cause a discharge of dredged material or fill material to waters of the United States that is in violation of the requirements under Section 404 of the Clean Water Act, as amended;

(4) Deposit waste in standing water; and shall not

(5) Allow the discharge of leachate from the landfill unit unless the discharge is permitted under the NPDES system.

(b) Control Systems Required - Run-on and run-off control systems shall be constructed, operated and maintained as necessary to meet the requirements of this section. Upon Department approval, run-on and run-off control systems may be removed from service at such time as closure activities have been completed, a permanent vegetation cover has been established, and there is no evidence of leachate seepage or other point and nonpoint discharges from the landfill unit.

Reg.22.519- Liquids Restrictions

(a) Applicability - Bulk or noncontainerized liquid waste may not be placed in landfills unless the waste is leachate or gas condensate derived from the unit and the unit is designed with a composite liner and leachate collection system.

(b) Mixing and Bulking - Landfills shall not accept liquid waste for treatment unless the landfill has a Department approved mixing or bulking area and is equipped to solidify, test and certify that liquid wastes treated in the mixing or bulking area meet the requirements of this section for landfilling. Mixing and bulking areas shall be separate from the working face unless otherwise approved by the Department.

(c) Air Drying - Air drying of wastes shall not be utilized where the practice causes or contributes to the development of nuisance conditions including odors and vector attraction.

(d) Free Liquids Determination - Treated liquid wastes must not exhibit free liquids as determined by the paint filter test and the blended material must be capable of supporting cover soil and equipment prior to disposal in the landfill.

Reg.22.520- Recordkeeping Requirements

(a) General Requirements - The owner or operator must record and retain near the facility in an operating record or in an alternative location approved by the Director the following information as it becomes available:

(1) Any required location restriction demonstrations for new units and expansions of the permitted area;

(2) Inspection records, training procedures, and notification procedures required in Reg.22.511 regarding hazardous waste exclusion. Records shall be maintained of the analytical results from the analysis of potentially hazardous commercial, industrial and process wastes that are accepted for disposal. In addition, written procedures for safely handling and disposing of special materials and potentially hazardous substances shall be maintained at the site.

(3) Explosive gas monitoring records if required in Reg.22.514 shall be maintained that identify the test results, date of testing, test location, person performing the tests, local conditions that may impact test results, and any measures taken to mitigate or remediate hazards from explosive gases;

(4) Leachate disposal records shall be maintained that document approval of the disposal method and location, and the date and quantity of leachate disposed of or recirculated in the landfill

unit. Leachate analytical data shall be maintained for leachate disposed of by methods other than recirculation in the landfill unit.

(5) Any demonstration, certification, finding monitoring, testing, or analytical data required by Chapter 12;

(6) Closure and post-closure care plans and any monitoring, testing, or analytical data as required by Reg.22.1301 and Reg.22.1302;

(7) Any cost estimates and financial assurance documentation required by Chapter 14;

(8) Any quality assurance/quality control (QA/QC) documentation, certification, and test result relating to the construction of the landfill liner and leachate collection system, ground water monitoring system, and final cover system;

(9) Records of any periodic inspections required by this Regulation or by permit conditions; and

(10) Any other records required by Regulation 22 such as but not limited to Annual Engineering Inspection Reports.

(b) Availability of Records - All information contained in the operating record must be furnished upon request to the Department or be made available at all reasonable times for inspection by the Department.

(c) Waste Receipt Records - All Class 3 owners or operators shall provide an adequate means of recording the weight of waste that is received by the facility. Class 3 Commercial landfill must have a "ticket" system or approved alternative that meets the requirements of Reg.22.421. Class 3 Commercial landfills must install and operate scales in accordance with Reg.22.421(j).

(d) Record Retention Period - The records required under this section shall be maintained by the owner or operator until destruction of the records is authorized by the Director following the completion of the post closure monitoring period.

Reg.22.521- Operating Plan And Narrative

(a) Applicability - Each permitted facility shall develop and implement an operating plan and narrative. The purpose of the operating plan and narrative shall be to develop and present site specific methods and procedures by which the facility will maintain and document compliance. The operating plan and narrative shall address the requirements of this regulation and any other regulations applicable to the operation and construction of the facility.

(b) Submission Date - The operating plan and narrative shall be submitted to and approved by the Department as either a part of the permit application process (Reg.22.303), permit modification process (Reg.22.308) or permit renewal process (Reg..22.309).

(c) Updates - Each facility shall update the plan and narrative as required to reflect current operations and regulations. Revisions to the document shall be submitted to the Department which reserves the right to require that the changes be accomplished through a permit modification prior to implementation.

Reg.22.522- Annual Engineering Inspection Reports

(a) Annual Inspection - A professional engineer registered in the State of Arkansas shall inspect each permitted Class 3 facility and prepare a report addressing operational compliance with permit conditions, permit plans and specifications, the operating narrative and all applicable regulations. The Annual Engineering Inspection Report shall address the 12-month period from January through December and shall be submitted to ADEQ by June 30 of the following year. The Annual Engineering Inspection Report shall contain at a minimum:

(1) The volumetric capacity remaining in the current landfill cell or area and the projected date for opening new cells or areas;

(2) The estimated remaining volumetric capacity of all permitted Class 3 landfill units, the landfill capacity (total air space) utilized during the past one year period, and the estimated remaining site life (in years) based upon the utilization rate during the previous one (1) year period.

(3) Documentation of compliance of facility fill progression with the approved permit plans, specifications and operating plan and narrative;

(4) Documentation of compliance with the operating requirements of this regulation, permit conditions, and the approved operating plan;

(5) An up to date contour map that depicts with reasonable accuracy:

(i) The horizontal and vertical extent of the active and inactive fill areas;

(ii) The status of each permitted landfill unit or cell (future unit, active unit, inactive, under construction, under interim cover, undergoing closure, closed, post-closure, etc.);

(iii) The survey grid system required by Reg.22.426;

(iv) The location of any other visible surface features or improvements such as roads, fences, buildings, gas control systems, surface water control systems, etcetera; and

(v) The person responsible for gathering survey data and the date(s) that survey data was taken to prepare the map. For purposes of annual reports, survey data may be collected by any person familiar with survey techniques, however, a professional engineer or land surveyor, registered in the State of Arkansas, shall perform the initial survey of new units required under Reg.22.428(h) and final survey of closed units required under Reg.22.1301(i).

(6) Quantity, location and characteristics of leachate collected, recirculated and disposed;

(7) Maintenance of stormwater controls and other best management practices for erosion control;

(8) Status of remedial or corrective actions taken;

(9) Revised or updated facility Closure Plan and the Post-Closure Care Plan in accordance with the requirements contained in Chapter 13 Closure and Post-Closure Care of these regulations.

(10) Updated Financial Assurance documentation as required in Chapter 14 Financial Assurance Criteria of these regulations; and

(11) Any other items impacting compliance at the landfill.

Reg.22.523- Ground Water Standards For Solid Waste Facilities And Practices

(a) Applicability - A facility or practice shall not contaminate an underground drinking water source beyond the solid waste boundary or beyond an alternative boundary specified in accordance with paragraph (b) of this section.

(b) Compliance Boundary - Owner or operators may demonstrate that compliance should be determined at an alternative boundary in lieu of the solid waste boundary. The Department may establish such an alternative boundary only if it finds that such a change would not result in contamination of ground water which may be needed or used for human consumption. This finding shall be based on analysis and consideration of all of the following factors that are relevant:

(1) The hydrogeological characteristics of the facility and surrounding land, including any natural attenuation and dilution characteristics of the aquifer;

(2) The volume and physical and chemical characteristics of the leachate;

(3) The quantity, quality, and direction of flow of ground water underlying the facility;

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

(5) The availability of alternative drinking water supplies;

(6) The existing quality of the ground water, including other sources of contamination and their cumulative impacts on the ground water;

(7) Public health, safety, and welfare effects.

(c) Definitions - As used in this section "Contaminate" means to introduce a substance that would cause:

(1) The concentration of that substance in the ground water to exceed its maximum contaminant level (MCL) specified in Appendix 3; or

(2) An increase in the concentration of that substance in the ground water where the existing concentration of that substance exceeds the MCL specified in Appendix 3.

Reg.22.524- Minimum Design Criteria

(a) Applicability - Unless provided otherwise, the requirements of this section as well as Reg. 22.525, Reg.22.528, Reg.22.529, Reg.22.530, Reg.22.531 and Reg.22.532 shall apply only to newly

permitted facilities, increases in the permitted capacity or disposal area, or permit renewals as specified in Reg.22.309.

(b) Consideration of Waste Characteristics - Landfills shall be subject to design and operational requirements dependent on the volume and physical, chemical and biological nature of the wastes. Design requirements shall also be dependent upon the geotechnical and hydrogeological characteristics of the site and surrounding locale. The design proposed by the applicant in conformance with the criteria set forth herein shall be supported by complete hydrogeological and waste characterization data.

(c) Ground Water Monitoring Required - In accordance with Reg.22.523, a facility or practice shall be designed to prevent the contamination of an underground drinking water beyond the solid waste boundary or beyond an alternative boundary specified in accordance with paragraph (b) of Reg. 22.523. Except as provided in Reg. 22.524(f)(3) and 22.621(e), ground water monitoring shall be required to confirm that ground water standards contained in Appendix 3 or as otherwise established under Chapter 12 are achieved.

(d) Site Characteristics - The site and waste characterization requirements of Chapter 11 shall be met for all new units and expansions of the permitted disposal area.

(e) Liner Design Criteria for Class 3 Commercial Landfills - New Class 3 Commercial landfills and expansions to the area permitted for waste disposal shall meet the design requirements set forth in Reg.22.424 through Reg.22.432.

(f) Liner Design Criteria for Class 3 NonCommercial Landfills - At a minimum, new Class 3 Noncommercial landfills and expansions of the permitted fill area shall be constructed:

(1) With a compacted clay liner of at least a two-foot thickness with a hydraulic conductivity of no more than 1×10^{-7} cm/sec and a leachate collection system that is designed and constructed to maintain less than a 30-cm depth of leachate over the liner; or

(2) In accordance with a design approved by the Director. The design must ensure that the concentration values specified in Appendix 3 will not be exceeded in the uppermost aquifer at the relevant point of compliance, as specified by the Director under Reg.22.523.

(3) Class 3 applicants proposing to fill only Class 4 type wastes as defined in this regulation may design and operate to the standards set forth in Chapter 6.

Reg.22.525- Class 3 Commercial Landfills In Boone And St. Joe Formations

(a) Applicability - New Class 3 Commercial landfills and expansions to the area permitted for waste disposal shall be designed and constructed to the standards set forth in Reg.22.425 for landfills located in the outcrop area of the Boone and St. Joe formations.

Reg.22.526- Survey Control

(a) Survey Control - A survey control system shall be established and maintained at each landfill in accordance with Reg. 22.426.

Reg.22.527- Surface Water Control

(a) Applicability - In addition to the requirements of Reg.22.517 and Reg.22.518 each landfill shall design and implement a system to control surface water at the facility in a accordance with the minimum standards set forth in Reg.22.517 and Reg.22.518, except that existing facilities must not comply with Reg.22.427(b) and (c) unless the current design includes a sedimentation pond.

Reg.22.528- Liner And Final Cover Design And Construction

(a) Quality Assurance Plan - Written quality assurance plans shall conform to the requirements of Reg. 22.428.

Reg.22.529- Leachate Collection System Design And Construction

(a) Applicability - The design and construction of leachate collection systems shall conform to the requirements of Reg.22.429.

Reg.22.530- Earthwork Balance

(a) Applicability - Applicants for new landfills and expansions to the permitted area shall provide an earthwork balance in accordance with the requirements of Reg.22.430.

Reg.22.531- Landfill Configuration

(a) Applicability - Applicants for new landfills and expansions to the permitted area shall comply with the landfill configuration requirements of Reg. 22.431.

Reg.22.532- Class 3 Monofills

(a) Design Standards - Class 3 monofills shall be designed and constructed to the standards for Class 3 Non-commercial landfills set forth in Reg.22.501et seq.

(b) Compliance with Regulation Number 14 - Waste tire handling, processing, recycling and disposal facilities shall additionally meet the requirements of Regulation Number 14, Waste Tire Program of the Pollution Control and Ecology Commission.

Reg.22.533- Other Requirements

(a) Applicants, permittees, owners and operators shall also refer to applicable provisions of Chapter 11, Geotechnical Investigations, Chapter12, Ground Water Monitoring and Corrective Action, Chapter 13,–Closure and Post Closure Care, and Chapter 14, Financial Assurance Criteria, for additional requirements.

Chapter 6 Class 4 Landfills

Reg.22.601- Location Restrictions

(a) Applicability - Applicants for a permit for a solid waste disposal, collection and processing facilities shall be responsible for selection of the proposed site subject to the provisions of this Reg. 22.602 through Reg.22.606. Solid waste disposal facilities or practices which violate any of the following criteria pose a reasonable probability of adverse effects on health or the environment.

Reg.22.602- Floodplains

(a) Floodplains - Solid waste facilities and practices shall be designed and operated in manner that will not restrict the flow of the base 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 and the environment.

(b) Demonstration Requirements - Applicants for new solid waste landfills and expansions to the area permitted for solid waste disposal shall demonstrate to the Department that the facility is in compliance with the criteria of paragraph (a).

Reg.22.603- Wetlands

(a) Demonstration Required - New Class 4 landfills and expansions to the area permitted for waste disposal shall not be located in wetlands, unless the owner or operator can make the demonstration in Reg. 22.404 to the Director.

Reg.22.604- Unstable Areas

(a) Applicability - Owners or operators of new Class 4 Landfills and expansions of the area permitted for waste disposal must demonstrate that engineering measures have been incorporated into the unit's design to ensure that the integrity of the structural components of the unit will not be disrupted. The owner or operator 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).

Reg.22.605- Separation Distances And Buffer Zones

(a) New Facilities and Expansions - Applicants for new Class 4 landfills and expansions to the permitted area shall comply with the following minimum separation distances and buffer zones as measured from the proposed active portion of the landfill:

(1) Five hundred (500) feet of an existing well or water intake used as a drinking water source as determined at the earliest date the notification or application is made to local or regional authorities as required by Reg.22.201, Reg.22.202, or Reg.22.203 as applicable;

(2) Three hundred (300) feet of an existing dwelling, unless owned by the applicant, as determined at the earliest date the notification or application is made to local or

regional authorities as required by Reg.22.201, Reg.22.202, or Reg.22.203 as applicable and within

(3) One hundred (100) feet of the property boundary.

(b) Existing Landfills - Existing landfill areas that were designed and permitted by the Department prior to May 7, 1995 for waste disposal are exempt from the requirements of paragraph (a) above. Expansions to the permitted area and the design of new landfill units after May 7, 1995 shall conform with buffer zone width requirements.

(c) Construction in the Buffer Zone - No permanent construction of any kind shall occur in the buffer zone other than fencing, access roadways, monitoring well construction, and surface water control systems. Landscaping for esthetics is encouraged in the buffer zone and may be required by the Department for individual sites. Where appropriate landscaping for esthetics is undertaken, pay stations, administration buildings, parking, run-on and run-off control systems and other facilities may be permitted in the buffer zone area.

(d) Proximity to Highways - Except as otherwise may be provided under regulations promulgated by the State of Arkansas Highway and Transportation Commission, landfills shall not be established, operated, or maintained within 1000 feet of the nearest edge of the right-of-way of any interstate, primary or other state highway designated by the Highway and Transportation Commission unless the landfill is screened by natural objects, plantings, fences, or other appropriate means so as not to be visible from the main-traveled way of the highway.

(e) Local Zoning - Nothing contained herein shall be construed to limit or interfere with local zoning requirements and ordinances pertaining to the operation of solid waste facilities or regional solid waste management district rules. The criteria set forth in this section is intended solely as minimum criteria for facilities located on lands where land use is not regulated by local authorities. Requirements herein do not relieve the applicant from complying with any more restrictive or comprehensive local or regional zoning requirements.

Reg.22.606- Endangered Species

(a) Prohibition Against Taking - Solid waste facilities and practices shall not cause or contribute to the taking of any endangered or threatened species of plants, fish, or wildlife.

(b) Destruction of Habitat - The facility or practice shall not result in the destruction or adverse modification of the critical habitat of endangered or threatened species as identified in 50 CFR Part 17.

Reg.22.607- General Operating Requirements

(a) Conformance with Permit Documents - All operations at the landfill shall be in accordance with the permit, approved plans and operating plan and narrative and all other applicable regulations.

(b) Operator Licensing - All operations shall be performed by licensed on-site operators at all times who are certified in accordance with Regulation Number 27 of the Pollution Control and Ecology Commission.

(c) Working Face Size - Dumping shall be confined to the smallest practical area. Multiple working faces shall not be allowed unless specifically approved in the facility operating plan.

(d) Waste Spreading and Compacting - As rapidly as solid waste is unloaded for disposal it shall be spread and compacted in the smallest practical area and covered in accordance with the requirements of Reg.22.609.

(e) Salvage Operations - Salvage operations shall not be permitted at the operating face of the fill. A salvage operation may be approved by the Department under the following conditions:

(1) An area has been designated by the permittee for the recovery of salvageable material.

(2) The operations shall not interfere with or otherwise delay the activities of the work face.

(3) The recovery of salvageable material must be conducted in an orderly manner.

(4) All salvaged materials shall be removed from the landfill site daily, or properly stored so that they will not create a nuisance or unsightly appearance.

(f) Prohibited Activities - The following activities shall be prohibited in conjunction with or upon the site of the landfill:

(1) Any scavenging of materials as defined herein;

(2) Any feeding of farm or domestic animals;

(3) Depositing waste in standing water; and

(4) Open burning as defined herein.

(g) Litter Control - If weekly cover does not control on and off site litter, other methods may be required, such as, but not limited to, litter fences and litter crews and the application of more frequent cover.

(h) Additional Surface Water Controls and Best Management Practices - In conjunction with and in addition to the requirements of Reg.22.614 and Reg..22.615, the owner or operator shall:

(1) Contour the surface of the working portion of the landfill to minimize surface water run-on or flow into or through the working face; and

(2) Install, construct, repair and maintain controls to prevent off-site sediment accumulation at all landfill, soil stockpile, and borrow site areas. Temporary and permanent seeding, grading, diking, terracing, diversion ditches, silt fencing, silt traps, vegetation filter strips, mulching, erosion control blankets and matting, gravel filter berms, check dams, riprap, sediment ponds and other best management practices for erosion and sediment control shall be provided as necessary. Best management practices for the site shall be in accordance with any stormwater permit issued for the site, shall be described in the operating narrative, and shall be included in the permit plans as appropriate.

(3) Final and interim slope stabilization must conform with Reg.22.427(f).

(i) Final Cover Vegetation and Maintenance - Immediately after permitted final grades have been attained and a final cover system installed, a cover of suitable perennial vegetation shall be

established to prevent erosion of cover soils. The vegetative cover shall be mowed at least annually or as needed to control the growth of undesirable annual weeds and woody vegetation, and to allow for inspection of the integrity of the cover system.

(j) Equipment Requirements - The owner or operator shall have provisions for the routine maintenance of equipment at the landfill. Adequate backup equipment shall be available within 24 hours in the event of breakdowns.

(k) Communications and Emergency Response - The owner or operator shall have an adequate telephone communication system in the event of fire or other emergency situations that may arise at the landfill and a written emergency response plan shall be maintained at the site.

(l) Employee Facilities - The owner or operator shall have an on site building/office with a potable water supply and sanitary facilities for site personnel.

(m) Operation to Prevent Bird Hazard - Owners or operators of all solid waste disposal and processing facilities and practices located within 10,000 feet (3,048 meters) of any airport runway end used by turbojet aircraft or within 5,000 feet (1,524 meters) of any airport runway end used by only piston-type aircraft shall be operated in a manner that does not pose a bird hazard to aircraft.

(n) Nuisance Avoidance - The owner or operator shall operate the landfill in a manner to avoid creating a public nuisance or public health hazard. The Department may require any additional information or action deemed necessary to assure an environmentally safe operation of the facility.

(o) Cover Maintenance - The owner or operator shall be responsible for maintaining the cover system integrity and shall promptly repair erosion, washout, tracking, or other defects that result in exposed or flagging refuse in either daily, intermediate, or final cover. Areas of leachate seepage, or areas exhibiting evidence of leachate seepage such as staining and discoloration of the cover system shall also be promptly repaired.

(p) Wet Weather Repairs - Due care shall be exercised in performing repairs during wet weather conditions to prevent the creation of additional cover defects. Prompt temporary measures shall be implemented in such cases until permanent repairs and remedies can be implemented.

Reg.22.608- Procedures For Excluding The Receipt Of Hazardous And Unauthorized Waste

(a) Applicability - Owners or operators shall perform periodic inspections of incoming loads and shall notify the Director of the delivery or attempted delivery of known or suspected regulated hazardous wastes and polychlorinated biphenyls (PCB) wastes as defined in Regulation Number 23.

(b) Separation of Unauthorized Wastes - Class 4 landfills shall develop and follow Department approved operating procedures to prevent the disposal of or provide for the separation of unauthorized waste from the approved Class 4 waste stream. Suitable containers, vehicles, or transfer capability shall be provided at the landfill site for the removal and disposal of unauthorized waste to a Class 1 landfill or other approved facility.

Reg.22.609- Cover Material Requirements

(a) Applicability and Frequency of Cover - The owners or operators of all Class 4 Landfills must cover disposed solid waste with six inches of earthen material at least weekly or at more frequent intervals if necessary, to control disease vectors, fires, odors, blowing litter, scavenging and to limit the

generation of leachate. Daily spreading and compaction of the waste shall be performed to minimize void space and reduce the potential for disease vectors and fires.

(b) Cover Thickness - A compacted layer of cover soil not less than twelve (12) inches, sufficient to ensure there is not exposed waste including the six (6) inches of daily cover required under Reg.22.609(a) shall be applied upon surfaces that will not receive an additional application of waste of final cover within 180 days.

(c) Temporary Waiver - The Director may grant a temporary waiver from the requirement of paragraph (a) and (b) of this section if the owner or operator satisfactorily demonstrates that extreme conditions exist that make meeting such requirements impractical. Failure of the operator to stockpile adequate cover material shall not constitute justification for a waiver under this section.

Reg.22.610- Disease Vector Control

(a) Applicability - Owners or operators of all permitted facilities must prevent or control on-site populations of disease vectors using techniques appropriate for the protection of human health and the environment.

Reg.22.611- Explosive Gases Control

(a) Standards - The concentration of explosive gases generated by the facility shall not exceed:

(1) Twentyfive (25) percent of the lower explosive limit (LEL) for the gases in facility structures (excluding gas control or recovery system components); and

(2) The lower explosive limit for the gases at the facility property boundary.

(b) Applicability - Owners or operators of Class 4 landfills shall not be required to implement a routine methane monitoring program unless the Director determines that:

(1) The nature and quantity of waste poses a significant potential for the generation of explosive gases; or

(2) Explosive gases have been detected in concentrations exceeding the standards identified in paragraph (a).

The monitoring program, if required, shall meet the requirements of Reg.22.415.

Reg.22.612- Air Criteria

(a) Applicability - Owners or operators of all permitted facilities must ensure that the units 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) Burning Prohibition - Open burning of solid waste, except for the infrequent burning of agricultural wastes, silvicultural wastes, landclearing debris, diseased trees, or debris from emergency clean-up operations and ordnance that may be allowed by the Arkansas Air Pollution Control Code, is prohibited at all units.

(c) Fire Safety - A facility or practice shall not pose a hazard to the safety of persons or property from fires. This may be accomplished through compliance with this section and through the periodic application of cover material or other techniques as appropriate.

Reg.22.613- Access Requirements

(a) Applicability - Owners or operators of all permitted facilities must control public access and prevent unauthorized vehicular traffic and illegal dumping of wastes by using artificial barriers, natural barriers, or both, as appropriate to protect human health and safety and the environment.

(b) Access Control and Signage - The site shall be adequately fenced with an entrance gate that can be locked. Class 4 landfills shall provide a sign showing the name of the facility, permit number, emergency telephone number, opening and closing hours and days of operation posted at the entrance to the facility.

(c) Access and Operational Roads - All weather operational roads shall be provided for vehicle movement within the site. The roads shall be of such construction quality to allow easy access in all weather conditions to all portions of the active disposal site and to other operational areas where all weather access is necessary to achieve timely compliance with permit requirements.

(d) Hours of Access - Access to the site shall be permitted only during the hours when operating personnel are on the site.

Reg.22.614- Run-On/Run-Off Control Systems

(a) General Requirements - At a minimum, Class 4 landfills shall design, construct, and maintain:

(1) A run-on control system to prevent flow onto the active portion of the landfill or waste processing area during the peak discharge from a 24-hour, 10-year storm;

(2) A run-off control system from the active portion of the landfill or waste processing area to collect and control at least the water volume resulting from a 24-hour, 10-year storm if required by the Department to meet the requirements of Reg.22.615.

(3) Best management practices for pollution prevention shall be implemented at each site to control the release of sediment and waste from the site.

Reg.22.615- Surface Water Requirements

(a) General Requirements - All Class 4 landfills shall not:

(1) Cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act, including, but not limited to, the National Pollutant Discharge Elimination System (NPDES) requirements, pursuant to Section 402 of the Clean Water Act;

(2) Cause the discharge of a nonpoint source of pollution to waters of the United States, 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;

(3) Cause a discharge of dredged material or fill material to waters of the United States that is in violation of the requirements under Section 404 of the Clean Water Act, as amended;

(4) Deposit waste in standing water or within five feet of the ground water table unless leachate collection systems are provided and operated; and shall not

(5) Allow the discharge of leachate from the landfill unit unless the discharge is permitted under the NPDES system.

(b) Control Systems Required - Run-on and run-off control systems shall be constructed, operated and maintained as necessary to meet the requirements of this section. Upon Department approval, run-on and run-off control systems may be removed from service at such time as closure activities have been completed, a permanent vegetation cover has been established, and there is no evidence of leachate seepage or other point and nonpoint discharges from the landfill unit.

Reg.22.616- Liquids Restrictions

(a) Containers Prohibited - Bulk or noncontainerized liquid waste and containers containing liquid waste shall not be placed in a Class 4 landfill.

(b) Treatment of Liquid Wastes Prohibited - Class 4 landfills shall not accept liquid waste for treatment or liquid wastes that have been treated at another location.

(c) Disposal of Waste Containing Free Liquids Prohibited - Wastes accepted for disposal must not exhibit free liquids as determined by the paint filter test.

Reg.22.617- Recordkeeping Requirements

(a) Requirements - The owner or operator must record and retain at the facility in an operating record or in an alternative location approved by the Director the following information as it becomes available:

(1) Any required location restriction demonstrations for new units and expansions of the permitted area;

(2) Closure and post-closure care plans and any monitoring, testing, or analytical data as required by Chapter 13;

(3) Any cost estimates and financial assurance documentation required by Chapter 14;

(4) Any quality assurance/quality control (QA/QC) documentation, certification, and test result relating to the construction of the landfill liner, ground water monitoring system if applicable, and final cover system;

(5) Records of any periodic inspections required by this Regulation or by permit conditions; and

(6) Any other records required by Regulation 22.

(b) Access to Records - All information contained in the operating record must be furnished upon request to the Department or be made available at all reasonable times for inspection by the Department.

(c) Waste Receipt Records - All Class 4 owner or operators shall provide an adequate means of recording the amount of waste that is received by the facility. The landfill must have a "ticket" system or approved alternative that meets the requirements of Reg.22.421.

(d) Retention Period - The records required under this section shall be permanently maintained by the owner or operator unless destruction of the records is authorized by the Director following the completion of the post closure monitoring period.

Reg.22.618- Operating Plan And Narrative

(a) Applicability - Each permitted facility shall develop and implement an operating plan and narrative. The purpose of the operating plan and narrative shall be to develop and present site specific methods and procedures by which the facility will maintain and document compliance. The operating plan and narrative shall address the requirements of this regulation and any other regulations applicable to the operation and construction of the facility.

(b) Submission Date - The operating plan and narrative shall be submitted to and approved by the Department as either a part of the permit application process (Reg.22.303), permit modification process (Reg.22.308) or permit renewal process (Reg.22.309).

(c) Updates - Each facility shall update the plan and narrative as required to reflect current operations and regulations. Revisions to the document shall be submitted to the Department which reserves the right to require that the changes be accomplished through a permit modification prior to implementation.

Reg.22.619- Annual Engineering Inspection Reports

(a) Applicability - This section applies to all Class 4 permitted landfills.

(b) Report Requirements - A professional engineer registered in the State of Arkansas shall inspect the landfill site at least annually and prepare an annual report addressing operational compliance with permit conditions, permit plans, specifications and the narrative and all applicable regulations. The Annual Engineering Inspection Report shall address the 12-month period from January through December and shall be submitted to ADEQ by June 30 of the following year. The Annual Engineering Inspection Report shall contain at a minimum:

(1) The volumetric capacity remaining in the current landfill cell or area and the projected date for opening new cells or areas;

(2) The estimated remaining volumetric capacity of all permitted Class 1 landfill units, the landfill capacity (total air space) utilized during the past one year period, and the estimated remaining site life (in years) based upon the utilization rate during the previous one (1) year period.

(3) Documentation of compliance of facility fill progression with the approved permit plans, specifications and operating plan and narrative;

(4) Documentation of compliance with the operating requirements of this regulation, permit conditions, the approved operating plan and any other applicable regulations;

(5) An updated contour map that depicts:

(i) The horizontal and vertical extent of the active and inactive fill areas;

(ii) The status of each permitted landfill unit or cell (future unit, active unit, inactive, under construction, under interim cover, undergoing closure, closed, post-closure, etc.);

(iii) The survey grid system required by Reg.22.426;

(iv) The location of any other visible surface features or improvements such as roads, fences, buildings, gas control systems, surface water control systems, etcetera; and

(v) The person responsible for gathering survey data and the date(s) that survey data was taken to prepare the map. For purposes of annual reports, survey data may be collected by any person familiar with survey techniques, however, a professional land surveyor, registered in the State of Arkansas, shall perform the initial survey of new units required under Reg.22.428(h) and final survey of closed units required under Reg.22.1301(i).

(6) Quantity, location and characteristics of leachate collected, recirculated and disposed;

(7) Maintenance of stormwater controls and other best management practices for erosion control;

(8) Status of capping and closure of completed areas;

(9) Status of remedial or corrective actions taken;

(10) Updated Financial Assurance documentation as required in Chapter 14 Financial Assurance Criteria of these regulations.

(11) Revised or updated facility Closure Plan in accordance with the requirements contained in Chapter 13 Closure and Post-Closure Care of these regulations.

(12) Any other items that affect compliance at the landfill;

Reg.22.620- Ground Water Standards For Solid Waste Facilities And Practices

(a) Applicability - A facility or practice shall not contaminate an underground water source beyond the solid waste boundary or beyond an alternative boundary specified in accordance with paragraph (b) of this section.

(b) Compliance Boundary - Owner or operators may demonstrate that compliance should be determined at an alternative boundary in lieu of the solid waste boundary. The Department may establish such an alternative boundary only if it finds that such a change would not result in contamination of

ground water which may be needed or used for human consumption. This finding shall be based on analysis and consideration of all of the following factors that are relevant:

(1) The hydrogeological characteristics of the facility and surrounding land, including any natural attenuation and dilution characteristics of the aquifer;

(2) The volume and physical and chemical characteristics of the leachate;

(3) The quantity, quality, and direction of flow of ground water underlying the facility;

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

(5) The availability of alternative drinking water supplies;

(6) The existing quality of the ground water, including other sources of contamination and their cumulative impacts on the ground water;

(7) Public health, safety, and welfare effects.

(c) Definitions - As used in this section "Contaminate" means to introduce a substance that would cause:

(1) The concentration of that substance in the ground water to exceed the maximum contaminant level specified in Appendix 3; or

(2) An increase in the concentration of that substance in the ground water where the existing concentration of that substance exceeds the maximum contaminant level specified in Appendix 3.

Reg.22.621- Minimum Design Criteria

(a) Applicability - Unless provided otherwise, the requirements of this section as well as Reg.22.624, Reg.22.625, and Reg.22.626 shall apply only to newly permitted facilities, increases in the permitted capacity or disposal area, or permit renewals as specified in .309.

(b) Design Standards - In accordance with Reg.22.620, a facility or practice shall be designed to prevent the contamination of an underground drinking water source beyond the solid waste boundary or beyond an alternative boundary specified in accordance with paragraph (b) of Reg. 22.620.

(c) Minimum Design Criteria - At a minimum, the bottom and side slope liner systems of new Class 4 landfills and expansions of the permitted fill area shall be constructed:

(1) With a compacted clay liner consisting of at least an 18 inch thickness with a hydraulic conductivity of no more than 1×10^{-5} cm/sec; or

(2) In accordance with a design approved by the Director. The design must ensure that the concentration values specified in Appendix 3 will not be exceeded in the uppermost aquifer at the relevant point of compliance, as specified by the Director under Reg.22.620. Landfills sited in favorable, uniform geologic settings exhibiting in-place

permeability equal to or less than 1 x 10^{-5} cm/sec may be constructed without compacted liners provided the standards of this section are met.

(d) Final Cover System Requirements - Each waste unit shall at a minimum provide a final cover system consisting of from bottom to top:

(1) A compacted clay barrier layer of at least a 18 inch thickness with a hydraulic conductivity of no more than 1 x 10^{-5} cm/sec; and

(2) An erosion layer of at least six inches thickness that is capable of supporting vegetation, or

(3) In accordance with a design approved by the Director. The design must demonstrate equivalency to the prescriptive final cover requirements contained in paragraph (1) of this section.

(e) Ground Water Monitoring - Ground water monitoring will not be required unless the Director determines that monitoring is required to confirm that the ground water standards set forth in Reg. 22.620 are being met.

Reg.22.622- Survey Control

(a) Survey Control Required - Each permitted landfill shall develop and maintain a method of survey control in accordance with Reg. 22.426.

Reg.22.623- Surface Water Control

(a) Applicability - In addition to the requirements of Reg.22.614 and Reg.22.615 each landfill shall design and implement a system to control surface water at the facility in a accordance with the minimum standards set forth in Reg. 22.427 except that existing facilities must not comply with Reg.22.427(b) and (c) unless the current design includes a sedimentation pond.

Reg.22.624- Liner And Final Cover Design And Construction

(a) QA Plan Required - Written quality assurance plans shall conform to the requirements of Reg.22.428.

Reg.22.625- Earthwork Balance

(a) Applicability - Applicants for new landfills and expansions to the permitted area shall provide an earthwork balance in accordance with the requirements of Reg. 22.430.

Reg.22.626- Landfill Configuration

(a) Applicability - Applicants for new landfills and expansions to the permitted area shall comply with the landfill configuration requirements of Reg.22.431.

Reg.22.627- Other Requirements

(a) Chapter References - Applicants, permittees, owners and operators shall also refer to applicable provisions of Chapters 11, Geotechnical Investigations, Chapter12, Ground Water Monitoring and Corrective Action, Chapter 13, Closure and Post Closure Care, and Chapter 14, Financial Assurance Criteria, for additional requirements.

Chapter 7 Special Materials Requirements

Reg.22.701- General Provisions

(a) Notification and Permit Requirements - Special materials, as defined by this Regulation, may be disposed of in Class 1 landfills provided the applicant has notified the Department of the intent to receive and dispose of such wastes and has received authorization by permit or modification thereof. Special materials shall not be disposed of in Class 3 or 4 landfills, unless the landfill is specifically designed for the receipt and disposal thereof and the disposal has been approved by the Department by permit or modification thereof. Unless written permission is granted by the Department or receipt of the waste is authorized under Chapter8, transfer stations, composting facilities, and solid waste recovery facilities are not authorized to accept special materials as defined and identified herein.

(b) Hazardous Waste Prohibition - Materials known to be hazardous waste are restricted from disposal at a landfill permitted under the authority of this Regulation.

(c) Hazardous Substances not Hazardous Wastes - Materials not regulated as hazardous wastes but known to be hazardous substances are eligible for disposal in a landfill provided the material is handled in a manner that protects the public health and safety, is consistent with this Regulation and any other regulations that may apply to the use and disposal of the waste.

(d) Restricted Materials - Other restricted materials include but may not be limited to oil sludges; pathological, infectious and biological wastes; radioactive materials; acutely hazardous chemicals; highly flammable or volatile substances; pesticides or herbicides and explosives.

(e) Owner or Operator Responsibilities - It is the responsibility of the owner or operator of all landfills to maintain compliance with the requirements for special materials handling and disposal at the landfill in accordance with the requirements described herein. The owner or operator is responsible for maintaining all records for proper waste characterization.

Reg.22.702- Asbestos Containing Material

(a) Applicable Regulations - Asbestos containing material (ACM) shall be handled and disposed of in accordance with Regulation Number 21, the Arkansas Asbestos Abatement Regulation, hereinafter referred to as Regulation 21, the Federal National Emission Standards for Hazardous Air Pollutants (NESHAPS). Where exempt ACM is accepted for disposal, or known or suspected ACM is discovered at the working face of the landfill, owners and operators are encouraged to handle known or suspected ACM in a manner that will not cause visible emissions to the atmosphere and to provide a six inch soil cover to the waste on the same day that known or suspected ACM is discovered or received.

Reg.22.703- Incinerator Ash

(a) Co-Disposal of Ash - The owner or operator of a Class 1 landfill may co-dispose of nonhazardous solid waste incinerator ash that is generated from an incinerator with a permitted input capacity of twelve (12) tons of material or less per day in the Class 1 landfill.

(b) Ash Monofill Requirement - The owner or operator of a Class 1 landfill may accept and dispose of incinerator ash from an incinerator with a permitted input capacity of greater than twelve (12) tons of material per day provided the owner or operator has demonstrated to the Department:

(1) That the incinerator ash will only be disposed of in a monofill or a separate waste cell specifically designed for the disposal of incinerator ash;

(2) That the incinerator ash monofill meets all the operational and design requirements for the permitting of Class 1 landfills as described herein.

(3) That the incinerator ash is not hazardous waste.

(c) Class 3 Landfill Acceptance - Incinerator ash produced by a manufacturing facility which utilizes solid waste generated on the premises of that facility in incinerators, boilers, or industrial furnaces, regardless of incinerator input capacity may co-dispose of incinerator ash in a Class 3 landfill, provided that the landfill is designed and permitted for the acceptance of the ash.

Reg.22.704- Water And Wastewater Treatment Sludge

(a) Applicability - Nonhazardous bio-solids or sludge from publicly owned treatment works may be disposed of in a permitted Class 1 landfill under the conditions described in this section. Sludge from industrial processes may be disposed of in a permitted Class 3 or Class 1 landfill under the conditions described in this section if authorized by the Department.

(b) Solidification/Free Liquids - The sludge shall be solidified to the extent necessary to support cover and compaction of the waste and shall not exhibit free liquids as defined by the paint filter test in Reg.22.420.

(c) Class 4 Prohibition - Sludge shall not be disposed of in a Class 4 landfill. Sludge shall not be disposed of in a Class 3 permitted landfill unless authority is granted by written approval by the Department.

(d) Sludge Characterization - Only nonhazardous sludge shall be landfilled. The owner or operator shall require adequate characterization of the waste and shall maintain waste characterization records.

(e) Sludge Monofills - Sludge monofills shall meet the requirements of 40 CFR Part 503.

(f) Regulatory Requirements - The treatment and disposal of sewage sludge (biosolids) from publicly owned treatment works shall conform to the requirements of 40 CFR Part 503. The disposal of other sludges resulting from the treatment of wastewater or sludges resulting from industrial process shall conform to the requirements of 40 CFR 257.

Reg.22.705- Liquid Or Semi-Liquid Cooking And Food Wastes Category

(a) Applicability - Containerized or noncontainerized liquids that are no longer fit for human or animal consumption, or for the use for preparation thereof or have been condemned by the Arkansas Department of Health may be disposed of in a Class 1 landfill, provided the landfill has been notified in advance of its intended shipment and has an approved operating plan for the bulking and conditioning of the waste prior to commencement of waste disposal operations.

(b) Applicable Materials - Specific items of this category include but are not limited to the following:

(1) Beverages of all types

(2) Waste Cooking Fats

(3) Grease Trap skimmings

(4) Human or Animal Food Products

(5) Frozen Food Processing Waste

(6) Cannery Pomace Wastes

(7) Hachery Waste

(8) Packing and Killing Plant Offal

(c) Regulatory Requirements - The treatment and disposal of liquid wastes shall be in accordance with Reg.22.420.

(d) Disposal Method - The waste shall be spread across the working face of the landfill and shall not be concentrated in one area for disposal.

(e) Transportation Requirements - Wastes in the above category that are suitable for rendering shall be transported in such a manner to avoid spillage.

Reg.22.706- Tires

(a) Applicability - The processing, recycling and disposal of waste tires shall conform to the requirements of Regulation 14, Waste Tire Program.

Reg.22.707- Disposal Of Spent Pesticide And Herbicide Containers

(a) Applicability - No person shall dispose of any pesticide or herbicide containers, or any residue therefrom in a manner inconsistent with its labeling or intended use, or in violation of 40 CFR 261.7(b)(3) or state pollution control or plant board standard.

(b) Triple Rinsing - Containers must first be triple-rinsed with at least fifteen percent (15%) of the volume of the container, using rinse water as makeup whenever possible. Salvageable containers may then be returned to the manufacturer or formulator, or a drum reconditioner for reuse. Nonsalvageable, triple-rinsed containers may then be crushed and transported to a Class 1 landfill for disposal.

(c) Container Residue - Container residue and rinse water should be added to application mixes in the field whenever possible. If not, they must be disposed of in accordance with manufacturers' label instructions.

Reg.22.708- Petroleum Contaminated Soils

(a) Applicability - Petroleum contaminated soils may be disposed of in a Class 1 landfill provided the contaminated soils meet the requirements established in the Hazardous and Unauthorized Waste Exclusion Plan developed by each Class 1 facility, as required by Reg.22.412, unless otherwise specified in the facility disposal permit. The facility operator shall be responsible for complying with all applicable waste determination protocols.

(b) Petroleum contaminated soils that comply with the facility Hazardous and Unauthorized Waste Exclusion Plan may be used as daily cover on interior working faces that drain directly into the facility leachate collection system.

Reg.22.709-Lights Containing Mercury

(a) After January 1, 2008, no person or entity shall knowingly place or dispose of the bulb or tube portion of an electric lighting device containing hazardous levels of mercury in a landfill if the device contains more than two-tenths milligram per liter (0.2 mg/l) of leachable mercury as measured by the Toxicity Characteristic Leaching Procedure as set out in EPA test Method 1311; and

(b) Adequate facilities exist for the public to properly dispose of the devices; and

(c) Facilities must update their Hazadous Waste Exclusion Plan as necessary for collection of these devices.

Chapter 8 Composting Facilities

Reg.22.801- Applicability And Exemptions

(a) Applicability - This Section regulates the construction and operation of composting facilities for yard waste, source separated organic wastes and other solid waste that may be approved by the Department for composting. Except for the permit exemptions provided herein, no person shall construct or operate a composting facility without first having obtained a permit or general permit authorization pursuant to this regulation.

(b) Acceptable Compostable Wastes - Only nonhazardous materials as defined by 40 CFR 261 and Department Regulation No. 23 shall be approved for composting. Compost materials shall be suitable for the proposed process and end use of the compost. Acceptable materials include:

(1) Yard waste and other vegetative materials such as grass clippings, leaves, and shredded or chipped brush, and tree prunings;

(2) Other organic waste including animal manure, food wastes, food processing wastes, grease trap waste, organic process wastes, septage and sewage sludge.

(3) Solid waste including household garbage and nonhazardous commercial wastes that are amenable to treatment by composting.

(c) Unacceptable Wastes - Regulated medical waste, waste containing polychlorinated biphenyls (PCB's), asbestos containing waste, and hazardous waste from conditionally exempt small quantity generators shall not be used in a composting operation. Nonhazardous industrial wastes not identified in paragraph (b) above are presumed unacceptable for composting . An applicant may overcome that presumption by submitting technical data with the application or otherwise demonstrating that the waste can be successfully treated by composting.

(d) Sewage Sludge - The composting of sewage sludge shall conform to the requirements of 40 CFR 503 and other regulations promulgated by the Pollution Control and Ecology Commission.

(e) Exemptions - The following solid waste management facilities and operations are exempt from permitting under this Section:

(1) The composting of less than 50 (fifty) tons or 500 (five hundred) cubic yards per year of incoming yard waste, silvacultural activities such as tree prunings and land clearing debris, and agricultural waste or other approved wastes not subject to the limitations of paragraph (c). (Assumption: 1 (one) cubic yard of loose, unshredded yard waste excluding manures weighs 200 pounds.) provided:

(i) The process follows acceptable methods of composting and is developed, operated, and maintained in a safe, nuisance free manner,

(ii) Prior to the commencement of construction, a written notice is provided to the Department describing the facility location, a description of the operation of the facility, and the intended end use for the compost.

(2) Small composting operations conducted by an individual treating yard and organic wastes taken solely from that individual's personal residence or property. This exemption may be revoked in the event that the composting operation becomes a nuisance to other persons or property owners either adjacent to or in the vicinity of the composting operation.

(3) Composting facilities that receive and treat only animal manures, agricultural wastes, yard wastes and wood wastes if the facility is operated in conjunction with and on the same property as a confined animal facility. Water Division permitting or authorization may be required in such instances.

(4) Composting facilities which exclusively receive and treat organic plant wastes from a nursery operation.

(5) The recovery and use of chipped, shredded or processed wood waste, excluding yard waste, for reuse as a mulch, composting material or other beneficial use.

Reg.22.802- Composting Facility Classifications

(a) Applicability - Composting Facilities shall be classified by the type of materials received and treated.

(1) Facilities that receive and treat only wastes identified in Reg.22.801(b)(1) shall be classified as Type Y compost facilities. Operations of Type Y facilities shall be covered under a General Permit.

(2) Facilities that receive and treat only source separated organic wastes, such as paper, food wastes, food-processing wastes, other compostable materials, or yard waste in combination with these wastes shall be classified as Type O compost facilities.

(3) Facilities that receive and treat mixed solid wastes such as household garbage, nonhazardous commercial wastes, or yard waste or source separated organic wastes in combination with these wastes shall be classified as Type S compost facilities.

(4) Facilities that receive and treat municipal sewage sludge in combination with wastes in paragraphs (1) and (2) above shall be classified as type O compost facilities. Facilities that receive and treat sewage sludge with wastes in paragraph (3) above shall be classified as type "S" facilities.

(b) The design, operation and reporting requirements contained in this chapter are identical for Type O and Type S composting facilities.

Reg.22.803- Location Restrictions And Siting Requirements

(a) Applicability - Composting facilities as specified shall meet the following requirements:

(1) Bird Hazards - Type O and Type S facilities located within 10,000 feet (3,048 meters) of any airport runway end used by turbojet aircraft or within 5,000 feet (1,524 meters) of any airport runway end used by only piston-type aircraft shall be designed and operated in a manner that will not pose a bird hazard to aircraft.

(2) Flood Hazards - Type CY, Type CO, and Type CS facilities shall be designed and operated in manner that will not restrict the flow of the base 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, wildlife, or land or water resources.

(3) Wetlands - Applicants for new Type Y, Type O, and Type S facilities and expansions to the permitted area shall demonstrate that the facility or facility expansion is not located in wetlands, or if it is, that it is in compliance with the provision of the Clean Water Act and implementing regulations. To demonstrate compliance the applicant must provide a wetlands delineation and any permit that may be required by the appropriate agency with jurisdiction for the proposed site. Where indicated by site characteristics, Type Y facilities may also be required to document compliance.

(4) Local Zoning - Type Y, Type O, and Type S facilties located within a municipality or county that has adopted restrictions on sites in conjunction with a comprehensive county-wide land use plan as provided in Reg.22.202, specific geographic site approval from the government(s) of jurisdiction shall be obtained by the applicant for submission to the Department with the pre-application.

(5) Setback Distances - Composting areas for all facilities placed in service after May 7, 1995, as measured from the edge of any composting area, or area used for storing in-coming materials or finished compost, shall not be located within:

(i) Fifty (50) feet of the property boundary;

(ii) One hundred (100) feet from a naturally occurring surface water body, stream or streambed; and

(iii) Two hundred (200) feet to an existing residence, place of business or drinking water supply not owned or leased by the applicant. Existing residences, businesses and water supplies shall be determined at the time in which notice is filed with the regional solid waste management district or a preapplication is filed with the Department, which ever comes first.

(b) Groundwater and Bedrock Separation Distances - Type O and S facilities shall not be located in areas where the seasonal high ground water is less than five feet from the top of the proposed compost floor system surface or where bedrock lies less than 24 inches below the top of the proposed compost pad surface. (c) Solid Waste Management District Notification - Applicants for composting shall provide notice to the Solid Waste Management District in which the facility is proposed to be located prior to submitting an application to the Department. In addition to the requirements of this Chapter, applicants for a permit shall comply with any District rules regarding the siting, design, or operation of solid waste management facilities and any applicable comprehensive local zoning requirements.

Reg.22.804- Application Requirements

(a) Application Procedures - Except as provided in this Chapter, applications for an individual permit for composting shall conform to the requirements of Regulation Number 8, Administrative Procedures, and this section. Applicants for coverage under the general permit program shall conform to the procedures established under the general permit program.

(b) Application Contents - An application for a composting permit shall include the following:

(1) The classification of the proposed facility;

(2) Proof of ownership or control of the site and proposed entity responsible for operation and maintenance of the composting site plant;

(3) A map or aerial photograph indicating land use and zoning within 1/2 mile of the facility showing all residences, structures, surface waters, public and private water supply sources, access roads, railroads, airports, historic sites, and other existing features in the project area;

(4) Maps indicating the existence of any regulated wetlands or floodplains on or adjacent to the site and, for Type CS facilities that accept putrescible wastes, any airports within 10,000 feet of the site;

(5) A site plan map that delineates:

(i) The proposed composting areas including any staging and storage areas for incoming materials and completed compost;

(ii) Property boundary locations, the location of existing and proposed access roads, on-site roads and other site improvements;

(iii) Site topography, showing contours, existing and proposed drainage characteristics including any run-on and run-off control systems that will be constructed;

(6) Type O and Type S facility applications require permit plans and specifications, prepared by a professional engineer registered in the State of Arkansas clearly showing and describing the facilities to be constructed. The design shall include or address all the operating requirements of Reg.22.805 and design requirements of Reg.22.806. A design narrative including calculations, rationale, and other documentation necessary to show compliance with these requirements shall accompany or be included in the permit specifications;

(7) All Type O and Type S composting facilities shall submit a geotechnical report that describes site conditions to a depth of at least ten feet, below existing ground surface, as determined from existing data or supplemented by on-site investigations. The geotechnical report shall, at a minimum, include a characterization that describes the site soil type, bedrock characteristics, and seasonal high water table. The site characterization information shall include the following:

(i) Soil type - the thickness and aerial extent shall be determined through the excavation of test pits or borings. Specific geotechnical testing of soil units may be required to ensure insitu soil appropriateness for the proposed facility design and operation.

(ii) Bedrock characteristics - bedrock lithology and depth should be determined through the excavations of test pits or borings. Data from existing excavations may be used

if they are of sufficient detail and quality. Additional studies may be necessary if initial characterization indicates the presence of any geologic/geotechnical conditions which may adversely affect or be affected by the proposed facility.

(iii) Seasonal high water table - depth to the seasonal high water table (if less than ten feet) beneath the proposed facility shall be determined through the excavations of test pits or borings. Also, aquifer properties such as the rate and direction of water movement must be determined. Data from existing excavations or published reports may be used if they are of sufficient detail and quality.An operating plan meeting the following requirements for each type of facility:

(i) Type Y facilities shall have a written operating narrative that addresses at least the following components:

(A) Description of the waste to be received;

(B) Designation of persons responsible for operation, control and maintenance of the facility;

(C) Methods for controlling the types of waste received;

(D) Methods of removing and recovering noncompostable materials for recycling or disposal including the removal, storage, and disposal of any hazardous wastes;

(E) Methods to minimize, manage and monitor odors;

(F) Runoff and NPDES storm water control measures;

(G) Description of the compost method to be utilized:

(H) Plans for marketing or distribution of the finished compost.

(ii) Type O and Type S facilities shall have a written operating plan that includes or addresses the following components:

(A) A description of the anticipated types, quantity, and sources of waste to be received and a description of any additives used in the process;

(B) Designation of persons responsible for operation, control, and maintenance of the facility;

(C) Methods for measuring incoming waste;

(D) Methods to control the types of waste received to include regular inspection procedures;

(E) Methods for removing and recovering for recycling or disposing of noncompostable wastes from the incoming waste stream, including procedures for removal, storage and disposal of any hazardous wastes;

(F) Methods to process incoming yard waste and finished compost;

(G) A description of the compost method to be utilized and the methods to maintain biological conditions, and to minimize, manage, and monitor odors;

(H) Leachate and NPDES storm water control measures;

(I) Vector, dust and litter control measures;

(J) Contingency operations plan that specifies the responsibilities and measures in the event of equipment failure, power outages, natural disasters, fire, receipt of prohibited materials, including the designation of permitted disposal sites for incoming wastes, leachate, and for hazardous wastes;

(K) Plans for monitoring, sampling and testing the composting materials for process control and product quality assurance as specified inReg.22.806;

(L) Plans for marketing or utilization of the finished compost.

(9) A closure plan meeting the following requirements for each class facility:

(i) The closure plan shall contain a schedule and description of the steps necessary to close the facility. Included in the plan shall be a detailed estimate of the cost required for a third party to perform the closure activities. The plan shall also include the following provisions:

(A) Periodic updates to the plan as determined by the Department;

(B) The Department shall be notified in writing 60 days prior to the proposed termination date of the facility;

(C) Within 10 days of ceasing operations, all residuals, waste, etc. shall be removed from the site and disposed. The facility will then arrange for a final cleaning of any containers, equipment, machines, floors, and facility surfaces having come in contact with source-separated organic waste or solid waste.

Reg.22.805- Operational Requirements

(a) Common Requirements - Requirements common to all composting facilities:

(1) The operation shall be conducted in a manner which precludes pollution, public health hazards, nuisances, odors and the harborage of vectors;

(2) Operation of the facility shall follow acceptable methods of composting which result in the aerobic biochemical degradation of the organic material received;

(3) All operations shall be performed by licensed on-site operators who are certified in accordance with Regulation No. 27 of the Commission during all hours of operation, and access to the facility shall be prohibited during nonoperating hours.

(b) Type Y Operating Requirements:

(1) A written operating record shall be maintained in accordance with Reg.22.808(a).

(2) The operation shall conform to an approved written operating narrative that includes or addresses the requirements of this Chapter.

(c) Type O and Type S Operating Requirements:

(1) The composting of sewage sludge shall meet the criteria for a process to further reduce pathogens (PFRP) and vector reduction as provided by 40 CFR § 503.

(2) The facility shall monitor and document the temperature of composting material to insure that pathogen reduction criteria are met. Temperature readings shall be recorded each operating day during the active composting period. Once the pathogen and vector reduction requirements have been met or exceeded, monitoring may occur less frequently;

(3) In order to minimize odors, the attraction of vectors and percolation of liquid waste through soils at the site, liquid and semi-liquid wastes, sludges, sewage sludge (biosolids) and septage shall be mixed with bulking agents or compost material as soon as practicable on the day they are received unless the operator satisfactorily demonstrates that severe conditions prohibit such activities. In any event, all incoming waste shall be incorporated into the composting process within a maximum of three days such that the liquid or sludge is promptly absorbed and not allowed to flow as free liquid from the bulking material or from the compost windrows. Otherwise, the waste shall be disposed of at a permitted landfill at the end of the 3 (three) day period.

(4) Stored, finished compost that is not sold within 6 months shall be removed or reprocessed for use or sale;

(5) A written operating record shall be maintained in accordance with Reg.22.808(b).

(6) The operation shall conform to an approved written operating plan that includes or address the requirements of this Chapter.

Reg.22.806- Design Requirements

(a) Class Y facility design must include the following:

(1) A general schematic of the proposed process including the proposed receiving, processing, production, curing and storage areas.

(2) The composting area shall have a surface that can withstand heavy equipment loads, and shall be sloped to prevent ponding.

(3) Stormwater management controls to meet State and Federal regulations and to prevent stormwater run-on from entering receiving, processing, curing, or storage areas.

(4) Site access and security measures to include barriers to unauthorized entry and dumping, all-weather access roads and signage.

(5) Methods for odor, noise, dust, vector, and litter control.

(6) Sufficient capacity to handle incoming waste and the storage of 6 months production of finished compost and methods to handle and remove unacceptable wastes delivered to the facility.

(b) Type O and Type S facilities shall be designed and certified by a professional engineer registered in the State of Arkansas and the design must include the following:

(1) A flow diagram of the proposed processing steps including an estimated mass balance of material received, residuals generated, recyclable items recovered and finished compost produced.

(2) A description and depiction of proposed equipment

(3) A low permeability composting floor system for storage of incoming waste and active composting areas. The floor system shall consist of a subbase of compacted clay, treated soil or other impermeable material with a permeability of 1×10^{-7} cm/sec or less and, for all new Type S facility applications and expansions after the effective date of this regulation, a minimum thickness of 12 inches, overlain by cement treated soil, stone or gravel base course, asphalt, concrete, compacted clay or other material which can withstand heavy equipment loads. The top of the composting floor system shall be sloped a minimum of two (2) percent to prevent ponding and shall drain or empty into a holding tank, sanitary sewer, permitted treatment system, or other leachate collection system.

(4) Site plan showing dimensions and details of the proposed processing, production, curing, and storage areas.

(5) Engineering drawings of the site indicating the location of roads, building, equipment, fences and gates, landscaping, utility lines, drainage facilities, and existing and final contours indicating any site grading work that will be necessary.

(6) Profile or cross section views of the site as necessary to describe the construction of access roads, drainage structures and features, existing and final grade, superstructures, processing or storage areas, and other significant features or structures.

(7) Stormwater management controls to meet State and Federal regulations and to prevent stormwater run-on from entering receiving, processing, curing, or storage areas, and to control stormwater run-off from these areas.

(8) Leachate collection and removal systems designed for incorporating the liquid back into the compost piles and/or removal and treatment.

(9) Site access and security measures to include barriers to unauthorized entry and dumping, all-weather access roads and signage.

(10) Methods for odor, noise, dust, vector, and litter control.

(11) Sufficient capacity to handle incoming waste including three (3) days storage, and storage of six (6) months production of finished compost, and methods to handle and remove unacceptable wastes delivered to the facility.

Reg.22.807 - Testing Of Run-Off And Compost

(a) NPDES Permits - The facility shall not commence construction or operation without required stormwater or discharge permits or documentation that a permit or permits is not required. Analysis results, DMR's and other stormwater or discharge records shall be retained as described in Reg.22.808.

(b) Type Y Facility Testing Requirements - Type Y facilities shall not be required to test the finished compost unless materials other than yard waste are incorporated into the compost. If other materials are found, then the facility shall be required be meet the requirements for a Type O or S permit, and compost shall be tested in accordance with Table 2 as directed by the Department.

(c) Types O & S Testing Requirements - Types O and S facilities shall develop an initial Quality Assurance/Quality Control plan to be included with the Operating Narrative outlined in Reg. 22.804. The initial plan will include, at a minimum, the parameters in Table 2. This plan will serve as an outline only and will be adjusted as described below:

(1) The Department will prescribe monitoring and sampling schedules for the first year of facility operation.

(2) From the information gained during this first year of operation, the plan will be updated to include monitoring schedules and quality assurance procedures.

(3) Compost shall be sampled and analyzed thereafter according to the approved plan.

(4) Test results will be available for inspection by the Department or be furnished to the Department upon request.

Reg.22.808- Recordkeeping And Reporting

(a) Type Y Facilities - Type Y composting facilities shall keep and retain records of operations which shall be available for inspection by the Department. Records shall include at a minimum:

(1) Monitoring results of stormwater runoff and/or site discharges as required by facility NPDES permits.

(2) Permit, design drawings, operating narrative, modifications, annual reports, and Department correspondence;

(3) Facility operating records as required by Reg. 22.804(b)(1).

(4) Quantity, type and source of incoming waste on a monthly basis;

(5) Quantity, of compost sold or distributed on a monthly basis;

(6) Quantity of residue removed for disposal, and the date and location of disposal;

(7) Any testing data including sampling information, chain-of-custody, and sample results that may be taken of compost products generated at the site; and

(8) Any other records required by Regulation 22.

(b) Type O and Type S Facilities - Types O and S facilities shall keep and retain records of operations which shall be available for inspection by the Department. Records shall include at a minimum:

(1) Compost analysis results which include the name of the testing laboratory;

(2) Quantity, type and source of incoming waste;

(3) Quantity and types of recovered recyclables, as appropriate;

(4) Quantity of compost produced;

(5) Quantity of compost sold/distributed, and markets;

(6) Quantity of disposed residue, date and location of disposal;

(7) Daily temperature readings and retention times during PFRP;

(8) Leachate management records and summaries;

(9) Monitoring results of stormwater runoff and/or site discharges as required by facility NPDES permits;

(10) Application documents, permits, design drawings, operating plans, modifications, Department correspondence;

(11) Annual reports and data for compiling annual reports.

(c) Annual Reports – All composting facilities shall submit an annual report to the Department covering a reporting period from January through December, and shall be submitted to the Department by March 31 of each year covering the previous reporting period.

(1) Type Y facilities shall submit an annual report summarizing the results of Reg.22.808(a) since the previous report;

(2) Type O and Type S facilities shall submit an annual report summarizing the results of Reg.22.808(b) above since the previous report.

Reg.22.809- Compost Utilization

(a) Labeling Requirements Compost produced from Type S and Type O facilities that is offered for sale or distribution must contain a label indicating recommended safe use and application rates, and

restrictions, if any, on use of the product. If compost is offered for bulk sale or distribution, signs or printed literature must be available with this information.

(b) Conformance with Standards - Utilization of compost produced from Type S facilities is governed by the parameters outlines in Table 2. Compost parameter limits have been selected to protect public health and safety and to protect the environment. Any material not meeting the parameter limits in Table 2 may be used only as authorized by the Department or it must be disposed.

(c) Exceptions - Persons wishing to apply material exceeding parameter limits in Table 2 must show that site-specific soil conditions will allow application without endangering the public or the environment and application site permitting may be required.

Reg.22.810- Closure And Financial Assurance

(a) Closure Notification - Composting facilities shall notify the Department in writing 60 days prior to the proposed termination date of the facility. Within 30 days of ceasing operations, all residuals, waste, etc. shall be removed from the site and disposed.

(b) Closure Plan Submittals - Composting facilities shall prepare and submit a closure plan containing a schedule and description of the steps necessary to close the facility. Included in the plan shall be a detailed estimate of the cost required for a third party to perform the closure activities. The plan shall also include the following provisions:

(1) An updated plan shall be submitted periodically as required by the Department;

(2) The Department shall be notified in writing 60 days prior to the proposed termination date of the facility;

(3) Within 10 days of ceasing operations, all residuals, waste, etc. shall be removed from the site and disposed. The facility will then arrange for a final cleaning of any containers, equipment, machines, floors, and facility surfaces having come in contact with source-separated organic waste or solid waste. All closure activities shall be completed not later than 45 days after the termination date of the facility in item (3).

(c) Financial Assurance Requirements - Owners and operators of permitted compost facilities shall post financial assurance in accordance with the requirements of this regulation. In considering the amount of financial assurance, the Director will base the decision upon:

(1) The size of the facility and the risk of environmental contamination; and

(2) 150% of the maximum permitted amount of all solid waste and compost ever stored on site at one time can be transported and disposed of by landfilling in a permitted Class 1 landfill by a third party.

(d) Use of Financial Assurance Funds - Financial assurance funds may be used, as determined by the Director, for any reasonable purpose to remediate and mitigate any environmental, health, and safety hazards at the site should the owner or operator be unable or unwilling to fulfill the permit obligations of this Regulation.

(e) Financial Assurance Mechanisms - Owners or operators required by the Director to post financial assurance shall choose an acceptable financial assurance mechanism from those listed in Reg.22.1405 and maintain the financial assurance until site closure has been conducted in accordance with the approved closure plan required under this section.

Table 2 Compost Quality Verification

PARAMETER	UNIT	LIMIT	TEST METHOD
Soluble salts – electrical conductivity	mmhos/cm		NCR Publication 221, Method 14; or EPA 9050A.
Pathogens	PFRP	N/A	EPA, 40 CFR ' 503 Appendix B(B)(1).
Fecal coliform	MPN/g	1000	Standard Methods 9221 E. or 9222 D.
Salmonella	MPN/4g	3 or less	Standard Methods 9260 D.
pH	s.u.	5.5-8.5	NCR Publication 221, Method 14; or EPA 9045.
Arsenic	mg/kg	41	AOAC 975.03b(b) and EPA dry wt. 6010A or 7061A; or EPA 3050 and 6010A or 7061A.
Cadmium	mg/kg	39	AOAC 975.03B(b) and EPA dry wt. 6010A or 7130; or EPA 3050 and 6010A or 7130.
Chromium	mg/kg	1200	AOAC 975.03B(b) and EPA dry wt. 6010A or 7190; or EPA 3050 and 6010A or 7190.
Copper	mg/kg dry wt.	1500	AOAC 975.03B(b) and EPA 6010A or 7210; or EPA 3050 and 6010A or 7210.
Lead	mg/kg dry wt.	300	AOAC 975.03B(b) and EPA 6010A or 7420 or 7421; or EPA 3050 and 6010A or 7420 or 7421.
Mercury	mg/kg dry wt.	17	AOAC 971.21; or EPA 7471A.
Molybdenum	mg/kg dry wt.	54	AOAC 975.03B(b) and EPA 6010A or 7480 or 7481; or AOAC 985.01 and EPA 6010A or 7480 or 7481; or EPA 3050 and 6010A or 7480 or 7481.
Nickel	mg/kg dry wt.	420	AOAC 975.03(b) and EPA 6010A or 7520; or EPA 3050 and 6010A or 7520.
Selenium	mg/kg dry wt.	36	AOAC 975.03B(b) and EPA 7740 or 7741A; or EPA 3050 and 7740 or 7741A.
Zinc	mg/kg dry wt.	2800	AOAC 975.03B(b) and EPA 6010A or 7950; or EPA 3050 and EPA 6010A or 7950.

Chapter 9 Transfer Stations

Reg.22.901- General Provisions

(a) Applicability - This Chapter regulates the construction and operation of solid waste transfer stations, which by definition shall include solid waste recovery facilties. No person shall construct or operate a transfer station used in the recovery, collection, segregation, processing, storage, or transport of solid waste materials without first having obtained an individual permit or authorization for coverage under a general permit pursuant to this regulation.

(b) The design and operation rules contained in this section are appropriate and applicable for operations that are not required to obtain permitting but are used to process solid waste at landfill facilities. Such operations may include but are not limited to baling, shredding, or other types of solid waste processing activities that occur within the landfill premises. Unless specifically approved by ADEQ, these types of processing activities shall comply with the design and operation requirements contained in this section and be specifically addressed in the facility operating narrative.

(c) Existing Transfer Stations - The Department may waive specific design requirements of this Chapter for facilities in existence prior to May 7. 1995, provided that the applicant demonstrates that physical improvements to the facility are not practical for implementation due to physical constraints at the facility. Any modifications to the facilities shall require Department approval and shall conform to the regulations in effect on the date of modification.

(d) Phase-out of "Green Box" Systems – Each solid waste management system shall have the capability to control the type and character of the waste that is collected through point of generation pick-up or attended public collection centers. Except for drop off points for source separated recyclables, a solid waste collection system consisting of unattended storage or collection boxes for public drop-off and use for which there is no means to restrict undesirable waste acceptance shall not be considered an acceptable solid waste management system. Solid Waste Management Systems may use collection boxes for public drop-off and use, without permit, if the site restricts the receipt of unauthorized waste, have attended ingress and egress to the site when operating, and does not compact waste at the site.

Reg.22.902- Location Restrictions And Siting Requirements

(a) Applicability - New and existing transfer stations shall meet the following Site Selection Limitations and Location Restrictions including but not limited to:

(1) A facility handling putrescible wastes within 10,000 feet (3,048 meters) of any airport runway end used by turbojet aircraft or within 5,000 feet (1,524 meters) of any airport runway end used only by piston-type aircraft shall be designed and operated in a manner that will not pose a bird hazard to aircraft.

(2) Facilities shall be designed and operated in a manner that will not restrict the flow of the base 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, wildlife, or land or water resources.

(3) New facilities or expansions shall demonstrate that it is not located in wetlands or, if it is, that it is in compliance with the provisions of the Clean Water Act and implementing regulations. To demonstrate compliance, the applicant must provide a wetlands determination prepared by the appropriate agency with jurisdiction for the proposed site and any permit required by the agency.

(4) If the proposed solid waste facility site is located within a municipality or county that has adopted restrictions on sites in conjunction with a comprehensive county-wide land use plan as provided in Reg.22.202, specific geographic site approval from the government(s) of jurisdiction shall be obtained by the applicant for submission to the Department with the pre-application.

(5) Transfer station active areas, as measured from a waste storage bin, receptacle or any permanent structure shall not be located within:

(i) Fifty (50) feet of the property boundary, and;

(ii) Two hundred (200) feet to an existing residence, place of business or drinking water supply not owned or leased by the applicant. Existing facilities shall be determined at the time in which notice is filed with the regional solid waste management district or a pre-application is filed with the Department, which ever comes first.

(b) Local Government Control - Nothing contained herein shall be construed to prevent local governments from exercising legitimate zoning authority over solid waste management facilities.

(c) Solid Waste District Notification - Applicants for transfer stations shall provide notice to the Solid Waste Management District in which the facility is proposed to be located. In addition to the requirements of this Chapter, applicants for a permit shall comply with any District rules regarding the siting, design, or operation of solid waste management facilities and any applicable comprehensive local zoning requirements. Applicants shall obtain a Certificate of Need from the District pursuant to A.C.A.§ 8-6-701 et seq.

(d) Waiver for Existing Facilities - The Department may waive all or part of the requirements of this Section for facilities in existence prior to May 7, 1995 provided that the applicant demonstrates that improvements to the facility are not practical due for implementation to physical constraints at the facility. Any subsequent modifications to the facilities shall require Department approval and shall conform to the regulations in effect on the date of modification.

Reg.22.903- Application Requirements

(a) Application Procedures - Applications for an individual permit to construct or operate a transfer station shall conform to the requirements of Regulation Number 8, Administrative Procedures, and this section. Applicants for coverage under the general permit program shall conform to the procedures established under the general permit program.

(b) Application Contents - An application for a transfer station permit shall be made on forms provided by the Department and shall include, either on the form or supporting documentation, the following:

(1) Owner of the site and proposed entity responsible for actual operation and maintenance of the transfer station;

(2) A map or aerial photograph indicating land use and zoning within 1/2 mile of the facility showing, with reasonable accuracy, residences, structures, surface waters, public and private water supply sources, access roads, railroads, airports, historic sites, and other existing features in the project area;

(3) Maps indicating the existence of any regulated wetlands or floodplains on or adjacent to the site.

(4) A site plan map that delineates:

(i) The proposed or existing buildings and improvements including any staging and storage areas for incoming solid waste;

(ii) Survey boundary locations, the location of existing and proposed access roads, utilities and any other site improvements;

(iii) General site topography, existing and proposed drainage characteristics including any run-on and run-off control systems that will be constructed;

(5) A description of the annual solid waste throughput and the service area population (both present and projected) including maximum storage time of any waste, and where all waste will be disposed of;

(6) Permit plans and specifications clearly indicating the layout and construction that will be undertaken and a design narrative or specifications describing the facility design;

(7) An operating plan describing how the facility will meet the requirements of this Chapter.

(8) Additional data or information as may be required by the Department.

Reg.22.904- Operational Requirements

(a) Acceptable Waste - Only household waste, commercial, and industrial waste shall be accepted at the facility except that no industrial process waste or infectious waste shall be accepted unless specifically approved by the Department. If Class 4 wastes are to be accepted for disposal at a Class 4 landfill, adequate provision shall be made for the proper separation, handling, storage and transfer of this waste.

(b) Ultimate Disposal of Waste - All solid waste passing through the transfer station must be ultimately reclaimed or recovered, or disposed of at a permitted landfill.

(c) Asbestos Waste - Department approval is necessary prior to the acceptance of asbestos waste at a transfer station facility

(d) Processing Areas - All processing, tipping, sorting, storage, compaction, and related activities must be conducted in an enclosed or covered area or, if outdoor areas are provided for these functions, within curbed areas where drainage is routed to an approved collection and treatment system. Storm water or wastewater discharges from the site shall conform to Department permitting requirements.

(e) Storage Area - Adequate storage space for incoming solid waste must be available at the transfer station.

(f) External Storage - External storage of solid waste containing putrescible material is prohibited. Nonputrescible solid waste which the facility has recovered for recycling may be stored out-of-doors at the facility for a period not to exceed one week unless the material is properly containerized so that there is no opportunity for rainfall to come into contact with the waste unless the facility has a storm water permit that includes the storage area. No person shall store solid waste at the facility in such a manner that the storage area or solid waste becomes a nuisance, litter, sanitary or environmental problem.

(g) Recoverable Solid Waste - Recovery of solid waste must have prior approval by the Department and supervised by the operator. Solid waste capable of recovery must be stored in clearly identified containers or areas, and maintained in a safe, sanitary, and orderly manner. A record of the type and quantity of solid waste recovered must be maintained.

(h) Supervision of Facility - The transfer station shall have a licensed on-site operator who has been certified in accordance with Regulation Number 27 of the Commission on duty at all times the facility is open. Suitable fencing, gates, or signs must be provided to limit unauthorized persons from access to the facility when the station is closed.

(i) Signs - A sign must be posted with the hours of operation and the types of solid waste accepted and not accepted at the transfer station at all access points to the facility.

(j) Control of Litter, Insects, Odors, and Vectors - The operation of the transfer station and the storage and handling of all solid waste shall be practiced so as to prevent the

attraction, harborage or breeding of insects, rodents and other vectors and to eliminate conditions which cause or may potentially cause:

(1) Harm to the public health and the environment;

(2) Safety hazards to individuals and surrounding property; and

(3) Excessive odor problems, unsightliness and other nuisances.

In addition, the transfer station shall be maintained in a neat and orderly appearance at all times through the control of blowing litter, proper storage of solid waste and recyclables and through other measures as may be necessary.

(k) Facility Maintenance - Sanitary conditions shall be maintained through the periodic wash-down or other appropriate cleaning method of the transfer station and transfer vehicles. Frequency of cleaning shall be sufficient to prevent odors and other nuisance conditions from developing. All residuals shall be properly disposed of following cleaning operations.

(l) Drainage - All floors must be free from standing water. All drainage from cleaning, unloading and processing areas must be discharged to sanitary sewers or permitted on-site treatment facilities.Storm water discharges from the site shall conform to Department storm water permitting requirements.

(m) Fire Protection - Adequate fire protection equipment must be available at all times.

(n) Annual Reporting - The facility owner or operator shall prepare and file with the Department annual reports by March 31 covering the period from the previous January through December on a form provided by or acceptable to the Department. Contents of the reports shall at a minimum include the:

(1) Source, volume or weight, and class of solid waste received at the facility;

(2) The volume or weight and type of recyclables recovered, if any; and

(3) The volume or weight of solid waste removed from the facility and the disposal location.

(o) Employee Facilities - Suitable enclosed office/pay station and restroom facilities shall be provided for employees.

(p) Operating Plan - All activities at the facility shall be performed in accordance with the permit plans and specifications and narrative required by this Chapter and approved by the Department. All permit plans and specifications, and narratives shall be maintained and be available for reference and inspection at the facility and shall be updated and re-approved by the Department as necessary to reflect present operations. All facilities shall maintain an operating plan or narrative that describes:

(1) How the requirements of this Section will be satisfied;

(2) The schedule of operation including the days and hours that the facility will be open;

(3) Personnel required and their training and responsibilities.

(4) Recordkeeping procedures and requirements;

(5) A description of measures that will be taken to identify and control undesirable wastes received that could either contaminate other wastes or pose unusual health hazards and risks to employees such as infectious medical waste and hazardous wastes;

(6) Equipment provided at the facility and its operation;

(7) Site access control method;

(8) A description of potential safety hazards and the safety equipment and protective gear, including but, not limited to, showers, eye wash, fire extinguisher, hoses, hard hats, safety goggles, respirators, hearing protection and personal hygiene facilities as appropriate;

(9) Fire fighting procedures, including availability of water for fire fighting;

(10) A contingency plan outlining the corrective or remedial measures that will be taken if unapproved wastes are delivered to the facility and in the event of odors, surface or ground water contamination, spills, equipment breakdown, and other undesirable conditions such as fires, dust, noise, and vectors.

(11) Closure plan

(12) Other information as required by the Department that is appropriate to the facility operating plan.

Reg.22.905- Design Requirements

(a) Design Documentation - Permit plans, specifications, vendor drawings and data, and design calculations will be provided as necessary to completely describe the facility construction and how the facility design meets the requirements of this section.

(b) Unloading and Loading Areas

(1) The unloading area must be adequate in size and design to facilitate efficient unloading from the collection vehicles and the unobstructed movement of vehicles.

(2) The unloading and loading pavement areas must be constructed of concrete or asphalt paving material and equipped with adequate drainage structures.

(3) Adequate facilities and equipment shall be provided for the periodic washdown of all processing, tipping, sorting, storage and compaction areas. Floor drains, collection troughs, curbs, drainage breaks, or other suitable drainage structures shall be provided as needed to collect and route all wash down water and other liquids from the processing, tipping, sorting, storage and compaction areas must be located within an enclosed building, or covered area or curbed area where drainage from the waste is routed to a sanitary sewer or permitted on-site facilities for treatment.

(4) Provisions must be made for weighing or measuring all solid waste transferred to the facility.

(5) Sufficient internal storage areas must be provided for incoming solid waste.

(6) Exhaust removal systems must be installed in enclosed areas.

(7) Truck wheel curbs or equivalent must be provided as needed to prevent backing into pits while unloading.

(c) On-site Roads

(1) The facility must be designed to accommodate expected traffic flow in a safe and efficient manner.

(2) Where public dumping is allowed, separate access for passenger vehicles should be provided for large facilities.

(3) The road surface design must be suitable for heavy vehicles and the road base must be capable of withstanding expected loads.

(4) On-site roads must be passable by loaded collection and transfer vehicles in all weather conditions. Provisions must be made for de-icing ramps.

Reg.22.906- Closure And Financial Assurance

(a) Financial Assurance Requirements - Owners and operators of permitted transfer stations shall post financial assurance in accordance with the requirements of this regulation if required by the Director. In considering whether financial assurance will be required, the Director may consider:

(1) The size of the facility and the risk of environmental contamination; and

(2) The relative risk of the owner or operator to become financially incapacitated to the point that 150% of the maximum permitted amount of all solid waste and recovered material ever stored on site at one time can be transported and disposed of by landfilling in a permitted Class 1 landfill by a third party.

(b) Use of Financial Assurance Funds - Financial assurance funds may be used, as determined by the Director, for any reasonable purpose to remediate and mitigate any

environmental, health, and safety hazards at the site should the owner or operator be unable or unwilling to fulfill the permit obligations of this Regulation.

(c) Financial Assurance Mechanisms - Owners or operators required by the Director to post financial assurance shall choose an acceptable financial assurance mechanism from those listed in Reg.22.1405 and maintain the finacial assurance until site closure has been conducted in accordance with the approved closure plan required under this section, or until the Director determines that the owner or operator is not required to maintain financial assurance.

(d) Closure Plan Requirements - All new applications and existing facilities shall be required to have on file with ADEQ a current closure plan containing schedules and descriptions of the steps necessary to close the facility. A detailed estimate of the cost required for a third party to perform the approved closure activities shall be included in the facility Closure Plan. The facility Closure Plan shall be updated annually and submitted to ADEQ in the facility annual report. The plan shall also include the following provisions:

(1) An updated operating narrative shall be submitted when aspects of the approved plan are changed;

(2) The Department shall be notified in writing sixty (60) days prior to the proposed termination date of the facility;

(3) Within ten (10) days of ceasing operations, all wastes shall be removed from the site and disposed at a properly permitted disposal facility, and the facility and equipment shall be brought to a sanitary condition. The operator shall then arrange for a final cleaning of any containers, equipment, machines, floors, and facility surfaces having come in contact with source-separated organic waste or solid waste. All closure activities shall be completed not later than 45 days after the termination date of facility operations unless otherwise approved by ADEQ.

(e) Closure Requirements - Upon termination of facility operations, owners or operators shall perform facility closure in accordance with the requirements of this section.

Reg.22.907 Recordkeeping Requirements

(a) Requirements - The owner or operator must record and retain at the facility in an operating record or in an alternative location approved by the Director the following information as it becomes available:

(1) Any required location restriction demonstrations of the permitted facility;

(2) Approved closure plans;

(3) Any cost estimates and financial assurance documentation required by Chapter14;

(4) Records of any periodic inspections required by this Regulation or by permit conditions, and

(5) Any other records required by Regulation 22.

(b) Access to Records - All information contained in the operating record must be furnished upon request to the Department or be made available at all reasonable times for inspection by the Department.

(c) Waste Receipt Records - All owner or operators shall provide an adequate means of recording the amount of waste that is received by the facility.

(d) Retention Period - The records required under this section shall be permanently maintained by the owner or operator unless destruction of the records is authorized by the Director following the completion of the post closure monitoring period.

Chapter 10 Construction and Demolition Recovery Facilities and Material Recycling Facilities

Reg.22.1001- Applicability

(a) This Chapter pertains to the construction and operation of construction and demolition recovery facilities (C&DRF) and material recycling facilities (MRF). Construction and demolition recovery facilities shall comply with all of the requirements of this Chapter. Material recycling facilities shall comply with the requirements of Reg.22.1002 Permit Required - No person shall construct or operate a construction and demolition recovery facility for the collection, storage, processing or recovery of materials from construction and demolition waste without first obtaining a permit or general permit authorization pursuant to this regulation.

(b) Exemptions from Permitting - The following facilities and activities are exempt from permitting:

(1) Material recycling facilities and facilities engaged solely in the handling and processing of nonputrescible, "source separated recovered materials" as defined in Reg.22.102. Operation of the MRF shall be in conformance with the requirements of Reg.22.1002;

(2) Facilities that are regulated pursuant to hazardous waste rules and regulations which are not also regulated pursuant to solid waste rules and regulations.

(3) Returnable container redemption operations conducted at a dealer, distributor, or redemption center;

(4) The recovery and storage of recyclables on the property of a manufacturer for use in the manufacturing process in the place of virgin material; and

(5) Automobile dismantlers, scrap metal processors and buyers, junkyards, facilities that recover metal from sludges that are not hazardous waste, and metal salvage yards are exempt from regulation under this section.

Reg.22.1002- Material Recycling Facilities

(a) Exemption from Permitting - In accordance with Reg.22.1001, MRFs are exempt from regulation under this Chapter provided that the operation of the facility is consistent with the requirements of this section. Facilities that fail to comply with the requirements of this section shall be subject to permitting in accordance with Chapter 9 or Chapter 10 as applicable, and enforcement action in accordance with Chapter 15.

(b) Recovered Materials Only - MRFs shall be engaged solely in the storage, processing, and resale or reuse of recovered materials and the owner or operator must be able to demonstrate that substantially all of the incoming materials at the facility are sold, used, or reused within one year.

(c) Conformance to District Rules - The operation of the facility shall be in conformance with any existing Regional Solid Waste District rules or regulations pertaining to MRFs.

(d) Vectors, Safety, and Odors - The operation of the MRF and the storage and handling of all recovered materials shall be done in a manner that prevents the attraction, harborage or breeding of

insects, rodents and other vectors and to eliminate conditions which cause or may potentially cause:

(1) Harm to the public health and the environment;

(2) Safety hazards to individuals and surrounding property; and

(3) Excessive odor problems, unsightliness and other nuisances.

In addition, the MRF shall be maintained in a neat and orderly appearance at all times through the control of blowing liter, proper storage of recyclables and through other measures as may be necessary to meet the requirements of this section.

(e) Control of Environmental Hazards - Recovered materials handled by the facility shall not be discharged, deposited, injected, dumped, spilled, leaked, or placed into or upon any land or water by the owner or operator of the MRF such that the recovered materials, or any constituent thereof, may enter other lands or be emitted into the air or discharged into any waters, including ground waters, or otherwise enter the environment such that a threat of contamination in excess of applicable Department standards and criteria is caused.

(f) Hazardous Waste Handling Prohibited - The recovered materials handled by the facility shall not be a hazardous waste as defined by Department regulations unless such handling is a part of a Department sanctioned household hazardous waste collection program. Handling and disposal of such household hazardous wastes shall be in accordance with Regulation 23.

Reg.22.1003- Location Restrictions And Siting Requirements

(a) Applicability and Requirements - New and existing C&DRF shall meet the following Site Selection Limitations and Location Restrictions including but not limited to:

(1) Facilities shall be designed and operated in a manner that will not restrict the flow of the base 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, wildlife, or land or water resources.

(2) New facilities or expansions shall demonstrate that it is not located in wetlands unless it is in compliance with the provisions of the Clean Water Act and implementing regulations. To demonstrate compliance, the applicant must provide a wetlands determination prepared by the appropriate agency with jurisdiction for the proposed site and any permit required by the agency.

(3) If the proposed C&DRF site is located within a municipality or county that has adopted restrictions on sites in conjunction with a comprehensive county-wide land use plan as provided in Reg.22.203, specific geographic site approval from the government(s) of jurisdiction shall be obtained by the applicant for submission to the Department with the application.

(4) Processing areas for all facilities, as measured from the edge of the recovery or recycling building or area, shall not be located within:

(i) Fifty (50) feet of the property boundary, and;

(ii) Two hundred (200) feet to an existing residence, place of business or drinking water supply not owned or leased by the applicant. Existing facilities shall be determined at the time in which notice is filed with the regional solid waste management district or a pre-application is filed with the Department, which ever comes first.

(b) Conformance With Local Zoning Requirements - Nothing contained herein shall be construed to prevent local governments from exercising legitimate zoning authority over solid waste management facilities.

(c) Solid Waste Management District Notification - Applicants for C&DRF shall provide notice to the Solid Waste Management District in which the facility is proposed to be located. In addition to the requirements of this Chapter, applicants for a permit shall comply with any District rules regarding the siting, design, or operation of solid waste management facilities and any applicable comprehensive local zoning requirements.

(d) Waivers for Existing Facilities - The Department may waive all or part of the requirements of this section for facilities in existence prior to May 7, 1995.

Reg.22.1004- Application Requirements

(a) Application Procedures - Applications for an individual permit for Construction and Demolition recovery facilities shall conform to the requirements of Regulation Number 8, Administrative Procedures and this section. Applicants applying for coverage under a general permit shall comply with the procedures established in the general permit program.

(b) Application Contents - An application for a permit for solid waste recovery facilities shall be made on forms provided by the Department and shall include, either on the form or supporting documentation, the following:

(1) Owner of the site and proposed entity responsible for actual operation and maintenance of the facility;

(2) A map or aerial photograph indicating land use and zoning within 1/2 mile of the facility which shall be of scale not smaller than 1 inch equals 500 feet to show all residences, structures, surface waters, public and private water supply sources, access roads, railroads, airports, historic sites, and other existing features the project;

(3) Maps indicating the existence of any regulated wetlands or floodplains on or near the site;

(4) A site plan map that delineates:

(i) The proposed or existing buildings and improvements including any staging and storage areas for incoming solid waste and recovered materials;

(ii) Survey boundary locations, the location of existing and proposed access roads, utilities and any other site improvements;

(iii) General site topography, existing and proposed drainage characteristics including any run-on and run-off control systems that will be constructed;

(5) A description of the annual Class 4 types of solid waste throughput and the service area population (both present and projected), and the estimated amount of material recovered by type;

(6) Permit plans and specifications clearly indicating the layout and construction that will be undertaken and an engineering narrative describing the facility design;

(7) An operating plan meeting the requirements of this Chapter outlining the proposed method of operations, the quantity and source of material to be processed, the proposed use and distribution of the processed or recovered material, a plan for the disposal of materials that cannot be used or recovered due to poor quality or changes in market conditions, and related details; and

(8) Additional data or information as may be required by the Department.

Reg.22.1005- Operational Requirements

(a) Public Health and the Environment - The operation shall be conducted in a manner which precludes pollution, public health hazards, nuisances, odors and the harborage of vectors.

(b) Approved Operating Plan - All activities at the facility must be performed in accordance with the manuals, plans, and programs required by this Chapter and approved by the Department. All manuals, plans, and programs required by this Part must be maintained and be available for reference and inspection at the facility. These manuals, plans, and programs must be updated and re-approved by the Department as necessary to reflect present operations

(c) Licensed Operator - All operations shall be performed by licensed on-site operators who are certified in accordance with Regulation Number 27 of the Commission.

(d) Receipt of Unauthorized Materials Prohibited - Unless the facility is permitted by the Department as a solid waste transfer station in accordance with Chapter 9, the facility may receive only Class 4 types of solid waste that will be treated or processed for the recovery of recyclables

(e) Fire Detection and Protection - All solid waste storage, handling and tipping areas must include fire detection equipment and fire protection services.

(f) Drainage - All floors must be free from standing water. All drainage from cleaning, unloading and processing areas must be discharged to sanitary sewers or permitted on-site systems. Storm water discharges from the site shall conform to Department storm water permitting requirements.

(g) Disposal of Residuals - All solid waste passing through the facility must ultimately be recycled or disposed of at a solid waste management facility authorized by the Department. Storage periods for incoming putrescible solid waste and recovery residuals shall not exceed 24 hours unless in a water-tight enclosed container.

(h) Access Control and Signs - Access to the site shall be controlled to minimize the possibility for any unauthorized entry onto the facility. Access control and security measures shall include, but not be limited to the provision of fencing and gates, the posting of warning signs or providing other natural and man-made barriers to entry. If the facility will be open to the public, a sign must be posted with the hours of operation and the types of solid waste and recyclable materials accepted and not accepted at the C&DRF at all access points to the facility.

(i) Employee Facilities - Suitable enclosed office/pay station and sanitary restroom facilities shall be provided for employees.

(j) Operating Plan Requirements - All activities at the facility shall be performed in accordance with the permit plans and specifications and narrative required by this Chapter and approved by the Department. All permit plans and specifications, and narratives shall be maintained and be available for reference and inspection at the facility and shall be updated and re-approved by the Department as necessary to reflect present operations. All facilities shall maintain an operating plan or narrative that describes:

(1) How the requirements of this section will be satisfied;

(2) The schedule of operation, including the days and hours that the facility will be open;

(3) Personnel required and their training and responsibilities.

(4) Daily traffic flow to and from the facility including the estimated or actual number of trips by private or public collection vehicles and quantity of solid waste received and removed from the facility;

(5) A description of measures that will be taken to identify and control undesirable wastes received that could either contaminate other wastes or pose unusual health hazards and risks to employees such as infectious medical waste and hazardous wastes;

(6) Equipment used including any shredding, sorting, screening, and handling equipment;

(7) Site access control method;

(8) A description of potential safety hazards and the safety equipment and protective gear, including but, not limited to, showers, eye wash, fire extinguisher, hoses, hard hats, safety goggles, respirators, hearing protection and personal hygiene facilities as appropriate;

(9) Fire fighting procedures, including availability of water for fire fighting;

(10) A contingency plan outlining the corrective or remedial measures that will be taken if unapproved wastes are delivered to the facility, and in the event of odors, surface or ground water contamination, spills, equipment breakdown, and other undesirable conditions, such as fires, dust, noise, and vectors.

(11) Other information as required by the Department that is appropriate to the facility operating plan.

(m) Reporting - The facility owner or operator shall prepare and file with the Department annual . reports by March 31 covering the period from the previous January through December on a form provided by or acceptable to the Department. Contents of the reports shall at a minimum include the:

(1) Source and volume or weight of solid waste received at the facility;

(2) The volume, weight and type of recyclables recovered;

(3) The volume or weight of solid waste removed from the facility and the disposal location; and

(4) The volume or weight of waste removed for composting or refuse derived fuel.

(5) Revised or updated facility Closure Plan in accordance with the requirements contained in Chapter 13 of these regulations.

(n) Control of Litter, Insects, Odors, and Vectors - The operation of the C&DRF and the storage and handling of all Class 4 types of solid waste and recovered materials shall be practiced so as to prevent the attraction, harborage or breeding of insects, rodents and other vectors and to eliminate conditions which cause or may potentially cause:

(1) Harm to the public health and the environment;

(2) Safety hazards to individuals and surrounding property; and

(3) Excessive odor problems, unsightliness and other nuisances.

(4) In addition, the C&DRF shall be maintained in a neat and orderly appearance at all times through the control of blowing liter, proper storage of solid waste and recyclables and through other measures as may be necessary.

(o) Acceptable Waste - Only construction and demolition waste shall be accepted at the facility.

(p) Ultimate Disposal of Waste - All solid waste passing through the C&DRF must be ultimately reclaimed or recovered, or disposed of at a permitted landfill.

(q) Processing Areas - All processing, tipping, sorting, storage, compaction, and related activities must be conducted in an enclosed or covered area or, if outdoor areas are provided for these functions, within curbed areas where drainage is routed to an approved collection and treatment system. Storm water or wastewater discharges from the site shall conform to Department permitting requirements. .

(r) Facility Washdown - Sanitary conditions shall be maintained through the periodic wash-down or other appropriate cleaning method of the C&DRF and transfer vehicles. Frequency of cleaning shall be sufficient to prevent odors and other nuisance conditions from developing. All residuals shall be properly disposed of following cleaning operations.

Reg.22.1006- Design Criteria

In addition to the other provisions of this Chapter, C&DRFs shall be designed in accordance with the following:

(a) Contents of Plans - The engineering plans shall include a detailed description of the facilities design that must address the following:

(1) Ingress and Egress - The plans should show the flow of traffic into and out of the facility. Separate entrances should be provided for incoming or outgoing trucks if necessary and a separate entrance provided for employees, customers, and visitors;

(2) Unloading and loading areas - Loading and unloading areas must be adequate in size and design to facilitate efficient loading and unloading from collection vehicles and the unobstructed movement of vehicles.

(3) Processing, tipping, sorting and treatment areas. Such areas for incoming materials must be located within an engineered pad having a durable surface designed for the types of vehicle and loading activities permitted at the site. The pad shall be maintained to prevent rutting and ponding of water.

(4) Weighing or measuring all solid waste accepted at the facility and residue, bypass waste and recyclables recovered and identification of the means to accomplish same;

(5) Sufficient storage areas for the incoming solid waste;

(6) Exhaust systems may be required for enclosed areas;

(7) Truck and wheel curbs provided to prevent backing into pits while unloading;

(8) Identification of the types of materials to be stored and the location(s) of temporary on-site storage areas;

(9) Adequate storage capacity is required at the facility for all waste handled and for those recyclables that will be stored before being removed; and

(10) If the facility is equipped with mechanical processors, a design that must maximize worker safety and be capable of minimizing the potential for, and the effects from, explosions.

(11) Adequate facilities and equipment shall be provided for the periodic washdown of all processing, tipping, sorting, storage and compaction areas. Floor drains, collection troughs, curbs, drainage breaks, or other suitable drainage structures shall be provided as needed to collect and route all wash down water and other liquids from the processing, tipping, sorting, storage and compaction areas to a sanitary sewer or permitted on-site facilities for treatment

(b) Contents of Specifications - Specifications must include any features of the construction and operation which are not described in other sections of this Chapter. Also included with the specifications should be any applicable design calculations that were used to calculate storage capacities, process volumes, system capacities, etc.

(c) Contents of Engineering Narrative - An engineering narrative shall be furnished that describes the facility design including:

(1) How the facility design meets the requirements of this Chapter; and

(2) A description of the overall operation and a functional description of all processing equipment to be used, with design criteria and anticipated performance. There must be sufficient description in the narrative to understand the flow of solid waste and the associated operations when considering the recyclables handling and recovery facility as a whole.

(d) On-site Roads - On-site roads must be passable by loaded collection and transfer vehicles in all weather conditions.

Reg.22.1007- Closure And Financial Assurance

(a) Financial Assurance Requirements - Owners and operators of permitted C&DRF's shall post financial assurance in accordance with the requirements of this regulation if required by the Director. In considering whether the financial assurance will be required, the Director may consider:

(1) The size of the facility and the risk of environmental contamination;

(2) The relative risk of the owner or operator to become financially incapacitated to the point that 150% of the maximum permitted amount of all solid waste, recyclable materials and recovered material ever stored on site at one time can be transported to another facility, or if that is not practicable, disposed of by landfilling in a permitted Class 4 landfill by a third party.

(b) Use of Financial Assurance Funds - Financial assurance funds may be used, as determined by the Director, for any reasonable purpose to remediate and mitigate any environmental, health, and safety hazards at the site should the owner or operator be unable or unwilling to fulfill the permit obligations of this Regulation.

(c) Financial Assurance Mechanisms - Owners or operators required by the Director to post financial assurance shall choose an acceptable financial assurance mechanism from those listed in Reg.22.1405 and maintain the financial assurance until site closure has been conducted in accordance with the approved closure plan required under this section, or until the Director determines that the owner or operator is not required to maintain financial assurance.

(d) Closure Plan Requirements - Applications submitted after the effective date of this regulation shall include a closure plan containing a schedule and description of the steps necessary to close the facility. Included in the plan shall be a detailed estimate of the cost required for a third party to perform the closure activities. The plan shall also include the following provisions:

(1) An updated plan shall be submitted with the facility annual engineering report as required by the Department;

(2) The Department shall be notified in writing 60 days prior to the proposed termination date of the facility;

(3) Within 10 days of ceasing operations, all wastes shall be removed from the site and disposed at a properly permitted disposal facility, and the facility and equipment shall be brought to a sanitary condition. The operator shall then arrange for a final cleaning of

any containers, equipment, machines, floors, and facility surfaces having come in contact with source-separated solid waste. All closure activities shall be completed not later than 45 days after the termination date of facility operations unless otherwise approved by ADEQ.

(e) Closure Requirements - Upon termination of facility operations, owners or operators shall perform facility closure in accordance with the requirements of this section

Chapter 11 Geotechnical And Hydrogeological Investigations

Reg.22.1101- General Requirements

The purpose of the geotechnical and hydrogeological site investigation is to thoroughly characterize all aspects of the property which may directly or indirectly affect the design, construction, operation or monitoring of the solid waste containment structure.

Reg.22.1102- Class 1 And Class 3 Landfills

(a) Applicability - The data and information required under this section shall be submitted by the applicant, for landfills which will receive household solid waste or commercial and industrial wastes. Class 3 landfill applicants proposing to dispose of only inert, nonputrescible Class 4 wastes shall meet the requirements of Reg.22.1104.

(b) Facility Design - A professional geologist registered in the State of Arkansas must determine through surface mapping, field borings and/or existing published information the local and site specific geology and structure of the study area. This includes an evaluation of the geomorphology, stratigraphy, geologic structure, hydrogeology and soil characteristics of the site.

(1) A conceptual hydrogeologic model of the site must be developed. All characterization studies must be integrated into a comprehensive geologic model which accurately describes and explains the site hydrogeology. The model must be of sufficient detail to base the design and be used as a predictive tool for potential contaminant migration, and serve as a basis for corrective actions.

(2) Geotechnical characterization of the materials on the site must be clearly demonstrated. All information required to base the design and operation of large load bearing waste containment structures must be included.

(3) Monitoring well location and design - The facility monitoring plan must be capable of detecting landfill derived water chemistry changes as soon as possible.

(c) Site Characterization - The site specific geology shall be defined through field investigations. A site characterization work plan outlining the initial investigations to be performed shall be submitted for Department approval prior to beginning the work. Additional studies and investigations may be required based on the findings of the initial investigation.

The work plan must include the following studies, as appropriate:

(1) Aerial photograph analysis of the study area to determine:

(i) Fracture traces and fracture orientation;

(ii) Sedimentary features; and

(iii) Depositional features.

(2) Detailed surface geologic mapping of the site and the area within 1/2 mile of the property boundary including:

(i) Surface stratigraphy;

(ii) Structural features;

(iii) Springs and seeps; and

(iv) Domestic, agricultural and municipal water wells.

(3) A surface geophysical study to determine changes in soil type, stratigraphic changes, sedimentary features and bedrock topography, utilizing one or more of the following methods:

(i) Electromagnetic;

(ii) Resistivity;

(iii) Seismic refraction;

(iv) Ground penetrating radar; or

(v) Any other method approved by the Department.

(4) A subsurface exploration program utilizing borings and test pits must be conducted on the site. Borings must be at a minimum spacing of one per five acres. Stratigraphically or structurally complex sites will require additional borings or test pits. The following information must be obtained from the study:

(i) Thickness and areal extent of each distinct lithologic unit;

(ii) Depth to bedrock and bedrock topography;

(iii) Rock quality designation and percent core recovery;

(iv) Fracture density, width and orientation;

(v) Bit drops and loses or gains in drilling fluid;

(vi) Geophysical logs of holes including one or more of the following methods:

(A) Conductivity;

(B) Resistivity;

(C) Natural Gamma;

(D) Caliper; and

(E) Any other method approved by the Department.

(5) The hydrogeology of the proposed landfill site must be explored through the installation of piezometers. The following information must be obtained through physical tests:

(i) Water table or potentiometric surface;

(ii) Ground water flow directions;

(iii) Hydraulic conductivities for hydraulically significant units;

(iv) Vertical and horizontal hydraulic gradients;

(v) Hydraulic communication between units based upon pump tests using appropriate methodology for the aquifer and utilizing multiple observation wells;

(vi) Ground water flow velocity; and

(vii) Ambient ground water chemistry for the detection monitoring parameters;

(6) Each distinct textural horizon must be classified using the Classification of Soils For Engineering purposes (ASTM D-2487) and characterized using the most recent versions of the following physical tests where appropriate:

(i) Atterberg limits (ASTM D-4318);

(ii) Standard penetration test (ASTM D 1586 & 1452);

(iii) Sieve analysis (ASTM D-1140 & D-422);

(iv) Dry density, hydraulic conductivity/molding water content (%) relationship;

(v) Remolded hydraulic conductivity (ASTM 5084);

(vi) Unconsolidated, undrained shear strength of soils (ASTM 2850);

(vii) Standard Proctor density (ASTM D 698);

(viii) Moisture-density relations of soils and aggregates (ASTM 1557);

(ix) One dimensional consolidation properties of soils (ASTM D 2435);

(x) One dimensional swell or settlement (ASTM D 4546); and

(xi) Moisture content of soils (ASTM 2216).

(d) Summary Report - All individual studies must be integrated into a comprehensive hydrogeologic model which is summarized in a written report and certified by a qualified ground water scientist. Recommended ground water monitoring points must be included and the locations based upon the site hydrogeologic model and facility design. All maps and cross sections included in the written report must be of a uniform scale and should include the following:

(1) A geologic map of the study area;

(2) Boring locations;

(3) Geophysical data collection points;

(4) Water table or potentiometric maps;

(5) Isopach maps of relevant units;

(6) Bedrock topography where appropriate;

(7) Geologic cross sections with the following information overlain:

(i) Stratigraphy;

(ii) Maximum depth of excavation for the containment structure;

(iii) Water table and or potentiometric surface from water levels;

(iv) Lithologic logs of boreholes with physical properties test results;

(v) Geophysical logs of boreholes;

(vi) Screened intervals in piezometers;

(vii) Aquifer test results indicated at the appropriate screened interval;

(e) Boone-St. Joe Aquifer Of Northern Arkansas - Proposed landfills located within the outcrop area of the Boone or St. Joe Formations of Northern Arkansas, which will receive municipal solid waste or waste with a high potential for adversely impacting surface or ground water quality (Class 1 or Class 3), may be required to perform additional studies (i.e., in addition to the requirements under Reg.22.1101, Reg.22.1102(a) through (d) and (f), and Reg.22.1103) in order to adequately characterize the site. At a minimum, the additional studies will include:

(1) A detailed surface mapping of all karst features including, but not limited to, sinkholes, springs, loosing stream segments, caves, and dolines;

(2) A subsurface exploration program which consists of core drilling at a minimum spacing of one boring per one acre;

(3) A down-hole video log and/or a geophysical log, obtained by one of the methods under Reg.22.1102(c)(4)(vi), must be conducted for each boring; and

(4) A ground water dye trace study shall be performed to test the accuracy of the sites conceptual hydrogeologic model. The dye study methodology must be approved by the Department and shall consists of a sufficient number of monitoring locations, which will include wells/piezometers, streams, and springs.

(f) Class 3 Waste and Site Characterization - The site characterization and facility design requirements for Class 3 landfills are dependant upon the potential for the waste to adversely impact surface or ground water quality. In the absence of actual leachate data, each waste stream proposed to be placed into the landfill must be characterized with the Synthetic Rainfall Leaching Procedure (SW-846 Method 1312). The purpose of this test method is to assess the leachate properties of a waste under conditions approximating a natural setting. The ground water standards set forth in Appendix 3 and Reg.22.523, and the surface water standards of Regulation Number 2 of the Pollution Control and Ecology Commission shall be utilized as indicators of the pollution potential of the specific waste stream.

(1) If one or more of the ground water standards are exceeded in the leachate or synthetic rainfall leaching procedure analytical results, the minimum site characterization requirements as described herein for Class 1 landfills shall be met. Facility design shall be in conformance with Reg.22.524(f)(1) or Reg.22.424 as determined by the waste and leachate characteristics.

(2) If the results of the leachate or synthetic rainfall leaching procedure analytical results, and waste characteristics indicate the waste has a low potential for adversely impacting surface or ground water quality, the minimum site characterization requirements as described herein for Class 4 landfills shall be met. Facility design shall be in conformance with Reg.22.524 or Reg.22.532 as applicable and Reg.22.621.

Reg.22.1103- Monitoring Well Construction

(a) Monitor Well Construction - Monitor wells shall be constructed of materials which are resistant to chemical and physical degradation, which will not interfere with ground water quality, and which meet the requirements of Section 5.7 of Solid Waste Disposal Facility Criteria, Technical Manual, EPA 530-R-93-017, November 1993 or ASTM D 5092-90 Design and Installation of Ground Water Monitoring Wells in Aquifers. Alternate methods of well construction, installation or development must be specifically approved by the Solid Waste Management Division. Following construction, each well shall be developed to the degree necessary to restore formation hydraulic conductivity and insure low turbidity samples which are representative of formation ground water quality.

Prior to sampling, turbidity values shall be allowed to stabilize to a level, which is representative of ambient water quality in the formation. If during background or routine sampling, the turbidity values consistently remain above 10 NTU's, a qualified groundwater scientist shall evaluate the integrity of the well, redevelop the well if necessary and/or provide written justification the turbidity values present in the samples are representative of ambient water quality in the formation. If the justification provided by the Permittee for the observed turbidity values is not considered valid, and/or if the well cannot be effectively redeveloped to reduce turbidity values below 10 NTU's, and/or if the well is found to be unreliable for generating representative water quality samples, it must be replaced prior to the next scheduled sampling event.

(b) Installer Licensing and Supervision - Well installers must be licensed by the State of Arkansas and the installation crew must be supervised in the field by a Geologist or Engineer experienced in the installation, construction and development of monitoring wells.

(c) Well Casings - Monitoring wells must be cased in a manner that maintains the integrity of the monitoring well bore hole. This casing must be screened or perforated and packed with gravel or

sand, where necessary, to enable collection of ground water samples. The annular space (i.e., the space between the bore hole and well casing) above the sampling depth must be sealed to prevent contamination of samples and the ground water. Completed well casings should extend approximately three feet above natural grade and must have an anodized aluminum or rust proof external protective casing with a locking lid.

(d) Well Numbering - Each completed well must be designated with a unique alpha-numeric label which must be clearly fixed to the outside of the well casing.

(e) Protection Posts - Wells which could possibly be damaged by equipment or vehicular traffic must be protected by steel post

(f) Department Approval - No monitor well or piezometer shall be installed, decommissioned, replaced, repaired or otherwise altered without prior approval by the Solid Waste Management Division. Upon completion of a well installation, replacement, decommissioning, repair or alteration, a report shall be made to the Solid Waste Management Division and a copy placed in the facility operating record. The work quality and methods must be certified by the supervising professional.

(g) Monitoring Well Survey - Each completed monitoring well must be surveyed following the guidelines under Reg.22.426. Additional to those guidelines, the survey should establish the elevation (referenced to mean sea level) of the ground surface and the top of the casing for each well location.

Reg.22.1104- Class 4 Landfills

(a) Applicability - This section applies to new permits and expansions of the permitted boundaries of all Class 4 landfills and Class 3 landfills disposing only Class 4 waste as established under Reg.22.1102.

(b) General Groundwater Separation Requirements Applicants shall demonstrate that the top of any bottom liner system will be located five (5) feet above the seasonal high water table surface, and within a soil or geologic unit with an insitu hydraulic conductivity of 1×10^{-5} cm/sec or less, or that an appropriate containment structure has been provided. in accordance with Reg.22.621(c).

(c) Yard Waste Facilities Groundwater Separation - Applicants for composting facilities that compost only yard, paper and wood waste shall demonstrate that the containment structures will be located two (2) feet above the seasonal high water table surface and within a soil or geologic unit with an insitu hydraulic conductivity of 1×10^{-5} cm/sec or less, or that an appropriate containment structure has been provided.

(d) Bedrock Separation - Including consideration of any liner system that may be provided in the facility design, waste shall not be placed within two (2) feet of the bedrock surface.

(e) Site Characterization - The following site characterization information must be obtained:

(1) Test pits and/or borings must be used to demonstrate the depth and site stratigraphy to a depth of no less than ten feet below the bottom of the containment structure. The excavations (i.e., test pits, borings, etc.) shall be at a minimum spacing of one per five acres.

(2) Representative samples of each distinct soil textural unit must be collected and characterized with the following tests:

(i) Sieve analysis (ASTM D-1140 and D-422), and

(ii) Atterburg limits (ASTM D-4318)

(3) Soil hydraulic conductivity tests shall be determined using undisturbed soil samples or an Insitu test utilizing an acceptable methodology.

Chapter 12 Ground Water Monitoring And Corrective Action

Reg.22.1201- Applicability

(a) Applicability - The requirements of this Chapter apply to Class 1 landfills, Class 3 landfills and other facilities that may be required by the Director to monitor ground water quality according to the provisions of this Chapter.

(1) Owners or operators of Class 1 landfills shall comply with the ground water monitoring requirements of this part in accordance with the schedule specified in paragraph (b) or an alternative schedule as specified in paragraph (c).

(2) Owners or operators of Class 3 landfills must comply with the ground water monitoring requirements of this part as the permit is re-issued or modified as described in Reg.22.309 but not later than May 7, 1998.

(3) Owners or operators of Class 4 landfills and Class 3 landfills that dispose of only Class 4 type waste will be exempt from the requirements of this Chapter unless otherwise required under Reg.22.621(e).

(b) Class 1 Compliance Schedule - Owners and operators of Class 1 landfills must comply with the ground water monitoring requirements of this part according to the following schedule unless an alternative schedule is specified under paragraph (c) of this section:

(1) Existing landfills and lateral expansions less than one mile from a drinking water intake (surface or subsurface) must be in compliance with the ground-water monitoring requirements specified in Reg.22.1202 – Reg.22.1208 by October 9, 1995;

(2) Existing landfills and lateral expansions greater than one mile from a drinking water intake (surface or subsurface) must be in compliance with the ground-water monitoring requirements specified in Reg.22.1202 – Reg.22.1208 by October 9, 1996.

(3) New landfills must be in compliance with the ground-water monitoring requirements specified in Reg.22.1202 – Reg.22.1208 before waste can be placed in the unit.

(c) Class 1 Alternative Compliance Schedule - The Director may specify an alternative schedule for the owners or operators of existing Class 1 landfills and lateral expansions to comply with the ground-water monitoring requirements specified in Reg.22.1202 - Reg.22.1208. This schedule must ensure that 50 percent of all existing landfills are in compliance by October 9, 1994 and all existing landfills are in compliance by October 9, 1996. In setting the compliance schedule, the Director 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:

(i) Current and future uses;

(ii) Proximity and withdrawal rate of users; and

(iii) Ground-water quality and quantity.

(d) Monitoring for Life of Facility - Once established at a landfill, ground-water monitoring shall be conducted throughout the active life and post-closure care period of that landfill as specified in Chapter 13.

(e) Waiver or Suspension - Ground water monitoring requirements under Reg.22.1202 through Reg.22.1207 may be suspended by the Director for a landfill if the owner or operator can demonstrate that there is no potential for migration of hazardous constituents from that landfill to the uppermost aquifer during the active life of the unit and the post-closure care period. This demonstration must be certified by a qualified ground water scientist and approved by the Director, and must be based upon:

(1) Site-specific field collected measurements, sampling, and analysis of physical, chemical, and biological processes affecting contaminant fate and transport, and

(2) Contaminant fate and transport predictions that maximize contaminant migration and consider impacts on human health and environment.

(f) Qualified Ground Water Scientist - For the purposes of this subpart, a qualified ground water scientist is ascientist, geologist or engineer who has received a baccalaureate or post-graduate degree in the natural sciences, and is registered in the State of Arkansas. A qualified ground water scientist must have sufficient training and experience in geology, geohydrology or ground water hydrology that enable that individual to make sound professional judgements regarding ground water monitoring, contaminant fate and transport, and corrective action.

(g) Alternative Compliance Schedules - The Director may establish alternative schedules for demonstrating compliance with Reg.22.1202 (e), pertaining to notification of placement of certification in operating record; Reg.22.1204(c)(1), pertaining to notification that statistically significant increase (SSI) notice is in operating record; Reg.22.1204(c)(2) and (3), pertaining to an assessment monitoring program; Reg.22.1205(b), pertaining to sampling and analyzing appendix 2 constituents; Reg.22.1205(d)(1), pertaining to placement of notice (appendix 2 constituents detected) in record and notification of notice in record; Reg.22.1205(d)(2), pertaining to sampling for appendix 1 and 2 to this part; Reg.22.1205(g), pertaining to notification (and placement of notice in record) of SSI above ground water protection standard; Reg.22.1205(g)(1)(iv) and Reg.22.1206(a), pertaining to assessment of corrective measures; Reg.22.1207(a), pertaining to selection of remedy and notification of placement in record; Reg.22.1208(c)(4), pertaining to notification of placement in record, and Reg.22.1208(f), pertaining to notification of placement in record (certification of remedy completed.

Reg.22.1202- Ground Water Monitoring Systems

(a) Applicability - As provided in Reg.22.1201(a), a ground water monitoring system must be installed that consists of a sufficient number of wells, installed at appropriate locations and depths, to yield ground-water samples from the uppermost aquifer (as defined in . Reg.22.102) that:

(1) Represent the quality of background ground water that has not been affected by leakage from a unit. A determination of background quality may include sampling of wells that are not hydraulically up gradient of the waste management area where:

(i) Hydrogeologic conditions do not allow the owner or operator to determine what wells are hydraulically up gradient; or

(ii) Sampling at other wells will provide an indication of background ground water quality that is as representative or more representative than that provided by the upgradient wells; and

(2) Represent the quality of ground water passing the relevant point of compliance specified by Director under Reg.22.424(d). The downgradient monitoring system must be installed at the relevant point of compliance specified by the Director under Reg.22.424(d) that ensures detection of ground water contamination in the uppermost aquifer. When physical obstacles preclude installation of ground water monitoring wells at the relevant point of compliance at existing units, the downgradient monitoring system may be installed at the closest practicable distance hydraulically downgradient from the relevant point of compliance specified by the Director under Reg.22.424(d) that ensures detection of ground water contamination in the uppermost aquifer.

(b) Multi-Unit Monitoring - The Director may approve a multi-unit ground water monitoring system instead of separate ground water monitoring systems for each landfill when the facility has several units, provided the multi-unit ground water monitoring system meets the requirement of Reg.22.1201 and will be as protective of human health and the environment as individual monitoring systems for each landfill, 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 landfills, and

(5) Type of waste accepted at the landfills.

(c) Well Construction and Decommissioning Requirements - Monitoring wells must be constructed in accordance with Reg.22.1103.

(1) The owner or operator must notify the Director 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) Site-Specific Design - The number, spacing, and depths of monitoring systems shall be determined based upon site-specific technical information developed in accordance with the requirements of Chapter 11 that must include thorough characterization of:

(1) Aquifer thickness, ground-water flow rate, ground-water flow direction including seasonal and temporal fluctuations in ground-water flow; and

(2) 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.

(e) Certification - The ground water monitoring system must be certified by a qualified ground water scientist or approved by the Director. Within fourteen (14) days of this certification, the owner or operator must notify the Director that the certification has been placed in the operating record.

Reg.22.1203- Ground Water Sampling And Analysis Requirements

(a) Consistency of Procedures - The ground water monitoring program must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of ground water quality at the background and downgradient wells installed in compliance with Reg. 22.1202(a). The owner or operator must notify the Director 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) Sampling and Analytical Methods - The ground water monitoring program must include sampling and analytical methods that are appropriate for ground water sampling and that accurately measure Appendix 1 parameters in ground water samples as specified in Reg.22.1204(d). Ground water samples shall not be field-filtered prior to laboratory analysis. Analytical methods utilized should conform SW-486 or the most current EPA approved analytical method. Primary Drinking Water Standard MCL's shall be superceded by the publication of new standards from EPA.

(c) Environmental Protection - The sampling procedures and frequency must be protective of human health and the environment.

(d) Determination of Groundwater Flow - Ground water elevations must be measured in each well immediately prior to purging, each time ground water is sampled. The owner or operator must determine the rate and direction of ground water flow each time ground water is sampled. Ground water 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 ground water flow which could preclude accurate determination of ground water flow rate and direction.

(e) Background Water Quality - The owner or operator must establish background ground water quality in each hydraulically up gradient or background well and the downgradient wells for each of the monitoring parameters or constituents required in the particular ground water monitoring program that applies to the landfill, as determined under Reg. 22.1204(a), or Reg.22.1205(a) for Class 1 landfills or as determined under Reg.22.523 and Reg. 22.524 for Class 3 and other facilities required to monitor ground water quality. Background ground water quality may be established at wells that are not located hydraulically up gradient from the landfill if it meets the requirements of Reg. 22.1202(a)(1) . Background ground water quality is determined through the collection of, at a minimum, four (4) independent samples from each well (background and downgradient). To account for seasonal and temporal variations, each sample shall be collected quarterly unless another frequency has been approved by the Director.

(f) Conformance with Statistical Procedures - The number of samples collected to establish ground water quality data must be consistent with the appropriate statistical procedures determined pursuant to paragraph (g) of this section. The sampling procedures shall be those specified under Reg. 22.1204(b) for detection monitoring, Reg. 22.1205(b) and (d) for assessment monitoring, and Reg. 22.1206(b) of corrective action.

(g) Statistical Method Selection - The owner or operator must specify in the operating record one of the following statistical methods to be used in evaluating ground water monitoring data for each constituent. The statistical test chosen shall be conducted separately for each 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 Reg. 22.1203(h). The owner or operator must place a justification for this alternative in the operating record and

notify the Director of the use of this alternative test. The justification must demonstrate that the alternative method meets the performance standards of Reg. 22.1203(h).

(6) In the event recommended EPA guidance changes, the statistical method selection should follow current EPA guidance directives.

(7) The most current statistical methods as recommended in EPA guidance publications.

(h) Statistical Method Selection Criteria - Any statistical method chosen under Reg. 22.1203(g) shall comply with the following performance standards, as appropriate:

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

(2) If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentrations or a ground water protection standard, the test shall be done at a Type I error level no less than 0.01 for each testing period. If a multiple comparisons procedure is used, the Type I 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 ground water 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 prediction interval is used to evaluate ground water 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 data base, 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 [i.e., the method detection limit (MDL) as specified in Reg.22.1204(d) of this part] with one or more statistical procedures that are protective of human health and the environment. A facility should report values between the Method Detection Limit (MDL) and Practical Quantitation Limit (PQL) but only utilize values reported above the PQL in the statistics. Any PQL or MDL 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 using current laboratory standards. All verifiable, positive detections above the constituent practical quantitation limit (PQL) must be reported and included in the statistical analysis.

(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) Determination of Statistically Significant Increase or Decrease- The owner or operator must determine whether or not there is a statistically significant increase or decreaseover background values for pH. The owner or operator must determine whether or not there is a statistically significant increase for each parameter or constituent required in the particular ground water monitoring program that applies to the landfill, as determined under Reg. 22.1204(a) or Reg. 22.1205(a).

(1) In determining whether a statistically significant increase has occurred, the owner or operator must compare the ground water quality of each parameter or constituent at each monitoring well designated pursuant to Reg. 22.1202(a)(2) to the background value of that constituent, according to the statistical procedures and performance standards specified under paragraphs (g) and (h) of this section.

(2) Within a reasonable period of time after completing sampling and analysis, the owner or operator must determine whether there has been a statistically significant increase compaired to the background at each monitoring well. The owner or operator shall notify the Department in writing of statistically significant increases in detection monitoring water chemistry parameters.

(j) Sampling and Analysis Plans - Owners or operators shall develop and implement a Department approved site specific written sampling and analysis plan. The sampling and analysis plan and all reports to ADEQ required under the sampling and analysis plan shall be certified by a qualified ground water scientist. The sampling and analysis plan must include the following elements:

(1) Detailed procedures used to collect reliable samples from the ground water monitoring system including:

(i) Equipment to be used to maintain a clean working area;

(ii) Equipment utilized to purge wells and to extract samples from wells;

(iii) Purge volumes and methods utilized to calculate purge volumes;

(iv) Sample extraction procedures and containerization of samples;

(v) Sample container labeling;

(vi) Sample chain of custody procedures;

(2) Laboratory analytical procedures;

(3) Sample collection and laboratory quality assurance/quality control procedures;

(4) Ground water analytical data submittal procedures, which shall include provisions for the direct submittal of all analytical results from the contract, or independent third party laboratory to the Department;

(5) A method for statistically evaluating ground water analytical data for significant changes must be selected. The method must be tailored to fit the hydrogeology of the site. For data quality assurance purposes, the statistical evaluation should be performed by a third party independent from the contract laboratory analyzing the ground water;

(6) Department notification procedures in the event that statistically significant increases in analytes are noted;

(7) A contingency plan must be developed which outlines the procedures to initiate an assessment monitoring program once confirmed statistically significant increases in analyte concentrations have been detected and the Solid Waste Division has been notified;

(k) Ground Water Monitor Reporting - The owner or operator of a Class 1 or 3 facility shall submit to the Director a Ground Water Monitoring Report prepared and certified by a qualified ground water scientist which contains a determination of the direction of ground water flow across the site based on water level measurements taken during the most recent sampling event at the facility and potentiometric surface map showing the locations of the monitor wells at the site. The permittee shall also provide a determination of the rate of ground water flow across the site. The facility must in accordance with the approved Sampling and Analysis Plan (SAP) determine if a Statistically Significant Increase has occurred for any constituent detected above established background concentrations at the facility, based on the analytical results from the most recent sampling event. The facility must provide appropriate documentation of SSI's in the GWMR. The operator shall analyze the monitoring data collected and provide a discussion in the GWMR on the findings and conclusions concerning ground water quality at the facility. If an SSI is confirmed, the permittee must notify the Department in accordance with Regulation 22.1204(c). The GWMR shall be submitted to the SWMD within 90 days from the date of the last recorded sampling event.

Reg.22.1204- Detection Monitoring Program

(a) Applicability - Detection monitoring is required at all ground water monitoring wells and sampling points defined under Reg. 22.1202(a)(1) and (a)(2) of this Chapter. A detection monitoring program must include the monitoring for the constituents listed in Appendix 1 of this regulation for Class 1 landfills and Appendix 3 of this regulation for Class 3 landfills and other facilities where groundwater monitoring is required.

(1) The Director may delete any of the Appendix 1 or 3 monitoring parameters for a landfill or other facility if it can be shown that the removed constituents are not reasonably expected to be found in or derived from the waste contained in the unit.

(2) The Director 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 1 to this part), if the alternative parameters provide a reliable indication of inorganic releases from the Class 1 landfill to the ground water. In determining alternative parameters, the Director shall consider the following factors:

(i) The types, quantities, and concentrations of constituents in waste managed at the landfill;

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

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

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

(3) The Department may further modify the list of detection monitoring parameters for Class 3 and other facilities if the applicant can demonstrate that a particular constituent, or its reaction products, can not be present within the waste to be placed into the landfill. Other parameters of concern may be added by the Department based upon individual waste and leachate characteristics.

(b) Sampling Frequency - The monitoring frequency for all constituents listed in Appendix 1 or Appendix 3 of this regulation, or in the alternative list approved in accordance with paragraph (a)(2) of this section, shall be at least semiannual during the active life of the facility (including closure) and the post-closure period and quarterly for Class 1 and Class 3C landfills located in the outcrop area of the Boone and St. Joe geologic formations. Unless another sampling schedule has been approved by the Director, a minimum of four (4) quarterly samples from each well (background and downgradient) must be collected and analyzed for the Appendix 1 or Appendix 3 constituents as applicable, or the alternative list approved in accordance with paragraph (a)(2) of this section, during the first year of ground water sampling. At least one sample from each well (background and downgradient) must be collected and analyzed during subsequent semiannual sampling events following the establishment of background ground water quality as required under Reg.22.1203(e).

(1) The Director may specify an appropriate alternative frequency for repeated sampling and analysis for Appendix 1 or Appendix 3 constituents, or the alternative list approved in accordance with paragraph (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:

(i) Lithology of the aquifer and unsaturated zone;

(ii) Hydraulic conductivity of the aquifer and unsaturated zone;

(iii) Ground water flow rates;

(iv) Minimum distance between up gradient edge of the Class 1 landfill and downgradient monitoring well screen (minimum distance of travel); and

(v) Resource value of the aquifer.

(c) Detection of Statistically Significant Increase - If the owner or operator determines, pursuant to Reg. 22.1203(g), that there is a statistically significant increase (or decrease for pH) over background for one or more of the constituents listed in Appendix 1 or Appendix 3 of this regulation, or in the alternative list approved in accordance with paragraph (a)(2) of this section, at any monitoring well at the boundary specified under Reg. 22.1202(a)(2), the owner or operator:

(1) Must, within fourteen (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 Director that this notice was placed in the operating record; and

(2) Must establish an assessment monitoring program meeting the requirements of Reg. 22.1205 within ninety (90) days except as provided for in paragraph (c)(3) of this section.

(3) The owner or operator may demonstrate that a source other than a landfill caused the contamination or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in ground water quality. A report documenting this demonstration must be certified by a qualified ground water scientist or approved by the Director and be placed in the operating record. If a successful demonstration is made and documented, the owner or operator may continue detection monitoring as specified in this section. If, after ninety (90) days, a successful demonstration is not made, the owner or operator must initiate an assessment monitoring program as required in Reg. 22.1205. . A flow chart (Figure 12-1), presenting the applicable requirements of the assessment monitoring program, can be found at the end of this chapter.

(d) Test Methods and Detection Limits - Only Department approved test methods shall be used in the analysis of ground water monitoring parameters. Unless written approval is granted by the Department, the reporting detection limit (MDL) must be less than or equal to the values reported in EPA Report SW-846 Test Methods For Evaluating Solid Waste third edition, November 1986, as revised December 1987, or current available edition. Volatile organic compound analysis shall be in accordance with Method 8260 while metal analysis shall be in accordance with method 6010 or a method from the 7000 series. The following inorganic parameters must also be analyzed for in each sample: chloride, total dissolved solids, sulfate, total organic carbon, pH, specific conductance, iron, and manganese.

(e) Sampling and Analysis Plans - Owners or operators shall develop and implement a Department approved, site specific written sampling and analysis plan. The sampling and analysis plan must include the following elements:

(1) Detailed procedures used to collect reliable samples from the ground water monitoring system including:

(i) Equipment to be used to maintain a clean working area;

(ii) Equipment utilized to purge wells and to extract samples from wells;

(iii) Purge volumes and methods utilized to calculate purge volumes;

(iv) Sample extraction procedures and containerization of samples;

(v) Sample container labeling; and

(vi) Sample chain of custody procedures;

(2) Laboratory analytical procedures;

(3) Sample collection and laboratory quality assurance/quality control procedures;

(4) Ground water analytical data submittal procedures which shall include provisions for direct submittal of certified analytical results electronically from the approved third-party laboratory to the ADEQ.

(5) A method for statistically evaluating ground water analytical data for significant changes must be selected. The method must be tailored to fit the hydrogeology of the site. For data quality assurance purposes, the statistical evaluation should be performed by a third party independent form the contract laboratory analyzing the ground water.

(6) Department notification procedures in the event that statistically significant increases in analytes are noted;

(7) A contingency plan must be developed which outlines the procedures to initiate an assessment monitoring program once confirmed statistically significant increases in analyte concentrations have been detected and the Solid Waste Division has been notified;

Reg.22.1205- Assessment Monitoring Program

(a) Applicability - Assessment monitoring is required whenever a statistically significant increase over background has been detected for one or more of the constituents listed in Appendix 1 for Class 1 landfills, Appendix 3 for Class 3 landfills and other facilities required to monitor groundwater, or in an alternative list approved in accordance with Reg. 22.1204.

(b) Assessment Monitoring Frequency - Within ninety (90) days of triggering an assessment monitoring program, and annually thereafter, the owner or operator must sample and analyze the ground water for all constituents identified in Appendix 2 of this part. A minimum of one sample from each downgradient well, and any other well which contained a statistically significant increase, must be collected and analyzed during each sampling event. For any constituent detected as the result of the complete Appendix 2 analysis, a minimum of four (4) independent samples from each well (background and downgradient) must be collected and analyzed to establish background for the new constituents unless the Director approves a more appropriate background sampling scheme. All detected constituents from the full Appendix 2 analysis and all Appendix 1 monitoring parameters shall be referred to as the assessment monitoring constituents (AMC) list.

The Director may specify an appropriate subset of wells to be sampled and analyzed for Appendix 2 constituents during assessment monitoring. The Director may delete any of the Appendix 2 monitoring parameters for facilities 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.

(c) Alternative Frequency - The Director may specify an appropriate alternate frequency for repeated sampling and analysis for the full set of Appendix 2 constituents required by Reg. 22.1205(b), 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) Ground water flow rates;

(4) Minimum distance between up gradient edge of the landfill or facility 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) Assessment Monitoring Procedures - After obtaining the results from the initial or subsequent sampling events required in paragraph (b) of this section, the owner or operator must:

(1) Within fourteen (14) days, place a notice in the operating record identifying the Appendix 2 constituents that have been detected and notify the Director that this notice has been placed in the operating record;

(2) Within ninety (90) days, and on at least a quarterly basis thereafter, resample all wells specified by Reg. 22.1202(a), conduct analyses for all assessment monitoring constituents (AMC) specified in Reg.22.1205(b) and record their concentrations in the facility operating record. At least one (1) sample from each well (background and downgradient) must be collected and analyzed during these sampling events. Following the first year of assessment monitoring, the Director may approve semiannual AMC sampling and analysis or an alternative frequency as specified below.

The Director 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 the AMC list 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 (c) of this section;

(3) Establish background concentrations for any constituents detected pursuant to paragraphs (b) or (d)(2) of this section; and

(4) Establish ground water protection standards for all constituents detected pursuant to paragraph (b) or (d) of this section. The ground water protection standards shall be established in accordance with paragraphs (h) or (i) of this section.

(e) Cessation of Assessment Monitoring - If the concentrations of all assessment monitoring constituents are shown to be at or below background values, using the statistical procedures in Reg. 22.1203(g), for two consecutive sampling events, the owner or operator must notify the Director of this finding and may return to detection monitoring.

(f) Assessment Levels Below Protection Standard - If the concentrations of any assessment monitoring constituents are above background values, but all concentrations are below the ground water protection standard established under paragraphs (h) or (i) of this section, using the statistical procedures in Reg.22.1203(g), the owner or operator must continue assessment monitoring in accordance with this section.

(g) Statistically Significant Assessment Levels - If one or more assessment monitoring constituents are detected at statistically significant levels above the ground water protection standard established under paragraphs (h) or (i) of this section in any sampling event, the owner or operator must, within

fourteen (14) days of this finding, place a notice in the operating record identifying the assessment monitoring constituents that have exceeded the ground water protection standard and notify the Director and all appropriate local government officials that the notice has been placed in the operating record. The owner or operator also:

(1) (i) Must characterize the nature and extent of the release by installing additional monitoring wells as necessary;

(ii) 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 Reg. 22.1205(d)(2);

(iii) Must notify all persons who own the land or reside on the land that directly overlies any part of the contaminant migration if contaminants have migrated off-site if indicated by sampling of wells in accordance with Reg. 22.1205(g)(1); and

(iv) Must initiate an assessment of corrective measures as required by Reg.22.1206 within ninety (90) days; or

(2) May demonstrate that a source other than a landfill or solid waste disposal facility caused the contamination, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in ground water quality. A report documenting this demonstration must be certified by a qualified ground water scientist or approved by the Director and placed in the operating record. If a successful demonstration is made the owner or operator must continue monitoring in accordance with the assessment monitoring program pursuant to Reg. .22.1205,, and may return to detection monitoring if the assessment monitoring constituents are at or below background as specified in Reg. 22.1205(e). Until a successful demonstration is made, the owner or operator must comply with Reg. 22.1205(g) including initiating an assessment of corrective measures.

(h) Groundwater Protection Standard - The owner or operator must establish a ground water protection standard for each assessment monitoring constituents detected in the ground water. The ground water 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 Reg. 22.1202(a)(1); or

(3) For constituents for which the background level is higher than the MCL identified under subparagraph (h)(1) of this section or health based levels identified under Reg. 22.1205(i)(1), the background concentration.

(i) Alternative Groundwater Protection Standards - The Director may establish an alternative ground water protection standard for constituents for which MCLs have not been established. These ground water protection standards shall be appropriate health based levels that satisfy the following criteria:

(1) The level is derived in a manner consistent with EPA 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 continuous lifetime exposure) with the 1×10^{-4} to 1×10^{-6} range; and

(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 this subpart, systemic toxicants include toxic chemicals that cause effects other than cancer or mutation.

(j) Groundwater Protection Standard Criteria - In establishing ground water protection standards under paragraph (i) of this section, the Director may consider the following:

(1) Multiple contaminants in the ground water;

(2) Exposure threats to sensitive environmental receptors; and

(3) Other site-specific exposure or potential exposure to ground water.

Reg.22.1206- Assessment Of Corrective Measures

(a) Applicability - Within ninety (90) days of finding that any of the constituents listed in Appendix 2 or Appendix 3, as applicable, have been detected at a statistically significant level exceeding the ground water protection standards defined under Reg.22.1205(h) or (i) of this part, the owner or operator must initiate an assessment of corrective measures. Such an assessment must be completed within a reasonable period of time.

(b) Assessment Monitoring Requirement - The owner or operator must continue to monitor in accordance with the assessment monitoring program as specified in Reg.22.1205.

(c) Corrective Measure Assessment - 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 Reg.22.1207, 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) Public Participation - The owner or operator must discuss the results of the corrective measures assessment, prior to the selection of remedy, in a public meeting with interested and affected parties.

Reg.22.1207- Selection Of Remedy

(a) Corrective Measure Selection - Based on the results of the corrective measures assessment conducted under Reg. 22.1206, the owner or operator must select a remedy that, at a minimum, meets the standards listed in paragraph (b) of this section. The owner or operator must notify the Director, within fourteen (14) days of selecting a remedy, a report describing the selected remedy has been placed in the operating record and how it meets the standards in paragraph (b) of this section.

(b) Selection Criteria - Remedies must:

(1) Be protective of human health and the environment;

(2) Attain the ground-water protection standard as specified pursuant to Reg.22.1205(h) or (i);

(3) Control the source(s) of releases so as to reduce or eliminate, to the maximum extent practicable, further releases of Appendix 2 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.Reg.22.1208(d).

(c) Evaluation Criteria - In selecting a remedy that meets the standards of Reg.22.1207(b), the owner or operator 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:

(i) Magnitude of reduction of existing risks;

(ii) Magnitude of residual risks in terms of likelihood of further releases due to waste remaining following implementation of a remedy;

(iii) The type and degree of long-term management required, including monitoring, operation, and maintenance;

(iv) 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 re-disposal or containment;

(v) Time until full protection is achieved;

(vi) 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, re-disposal, or containment;

(vii) Long-term reliability of the engineering and institutional controls; and

(viii) 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:

(i) The extent to which containment practices will reduce further releases; and

(ii) 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:

(i) Degree of difficulty associated with constructing the technology;

(ii) Expected operational reliability of the technologies;

(iii) Need to coordinate with and obtain necessary approvals and permits from other agencies;

(iv) Availability of necessary equipment and specialists; and

(v) Available capacity and location of needed treatment, storage, and disposal services.

(4) Practicable capability of the owner or operator, including a consideration of the technical and economic capability.

(5) The degree to which community concerns are addressed by a potential remedy(s).

(d) Schedule - The owner or operator 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 the following paragraphs (d) (1-8). The owner or operator 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 ground-water protection standards established under Reg. .22.1205(g) or (h) 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:

(i) Current and future uses;

(ii) Proximity and withdrawal rate of users;

(iii) Ground-water quantity and quality;

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

(v) The hydrogeologic characteristic of the facility and surrounding land;

(vi) Ground-water removal and treatment costs; and

(vii) The cost and availability of alternative water supplies.

(7) Practicable capability of the owner or operator.

(8) Other relevant factors.

(e) Corrective Action Unnecessary- The Director may determine that remediation of a release of an Appendix 1, Appendix 2, or Appendix 3 constituent from a landfill is not necessary if the owner or operator demonstrates to the Director that:

(1) The ground water 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 ground water that:

(i) Is not currently or reasonably expected to be a source of drinking water; and

(ii) 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 ground water protection standards established under Reg.22.1205(h) or (i); or

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

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

(f) Eliminating Future Releases - A determination by the Director pursuant to paragraph (e) of this section shall not affect the authority of the State to require the owner or operator to undertake source control measures or other measures that may be necessary to eliminate or minimize further releases to the ground water, to prevent exposure to the ground water, or to remediate the ground water to concentrations that are technically practicable and significantly reduce threats to human health or the environment.

Reg.22.1208- Implementation Of The Corrective Action Program

(a) Corrective Action Implementation - Based on the schedule established under Reg.22.1207(d) for initiation and completion of remedial activities the owner or operator must:

(1) Establish and implement a corrective action ground-water monitoring program that:

(i) At a minimum, meet the requirements of an assessment monitoring program under Reg.22.1205;

(ii) Indicates the effectiveness of the corrective action remedy; and

(iii) Demonstrates compliance with ground-water protection standard pursuant to paragraph (e) of this section.

(2) Implement the corrective action remedy selected under Reg.22.1207.; 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 Reg. 22.1207. The following factors must be considered by an owner or operator in determining whether interim measures are necessary:

(i) Time required to develop and implement a final remedy;

(ii) Actual or potential exposure of nearby populations or environmental receptors to hazardous constituents;

(iii) Actual or potential contamination of drinking water supplies or sensitive ecosystems;

(iv) Further degradation of the ground water that may occur if remedial action is not initiated expeditiously;

(v) Weather conditions that may cause hazardous constituents to migrate or be released;

(vi) 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

(vii) Other situations that may pose threats to human health and the environment.

(b) Corrective Action Ineffectiveness - An owner or operator may determine, based on information developed after implementation of the remedy has begun or other information, that compliance with requirements of Reg.22.1207(b) are not being achieved through the remedy selected. In such cases, the owner or operator must implement other methods or techniques that could practicably achieve compliance with the requirements, unless the owner or operator makes the determination under Reg.22.1208(c).

(c) Compliance Can Not be Achieved - If the owner or operator determines that compliance with requirements under Reg. 22.1207(b) cannot be practically achieved with any currently available methods, the owner or operator must:

(1) Obtain certification of a qualified ground-water scientist or approval by the Director that compliance with requirements under Reg.22.1207(b) 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; and

(3) Implement alternate measures for control of the sources of contamination, or for removal or decontamination of equipment, units, devices, or structures that are:

(i) Technically practicable; and

(ii) Consistent with the overall objective of the remedy.

(4) Notify the Director within fourteen (14) days that a report justifying the alternative measures prior to implementing the alternative measures has been placed in the operating record.

(d) Corrective Action Solid Waste Management - All solid wastes that are managed pursuant to a remedy required under Reg. 22.1207, or an interim measure required under Reg. 22.1208(a)(3), 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) Corrective Action Completed - Remedies selected pursuant to Reg,22.1207 shall be considered complete when:

(1) The owner or operator complies with the ground-water protection standards established under Reg.22.1205(h) or (i) at all points within the plume of contamination that lie beyond the ground-water monitoring well system established under Reg. 22.1202(a).

(2) Compliance with the ground-water protection standards established under Reg. 22.1205(h) or (i) has been achieved by demonstrating that concentrations of assessment monitoring constituents have not exceeded the ground-water protection standard(s) for a period of three consecutive years using the statistical procedures and performance standards in Reg. 22.1203(g) and (h). The Director may specify an alternative length of time during which the owner or operator must demonstrate that concentrations of assessment monitoring

constituents have not exceeded the ground water protection standard(s) taking into consideration:

(i) Extent and concentration of the release(s);

(ii) Behavior characteristics of the hazardous constituents in the ground water;

(iii) Accuracy of monitoring or modeling techniques, including any seasonal, meteorological, or other environmental variabilities that may affect the accuracy; and

(iv) Characteristics of the ground water.

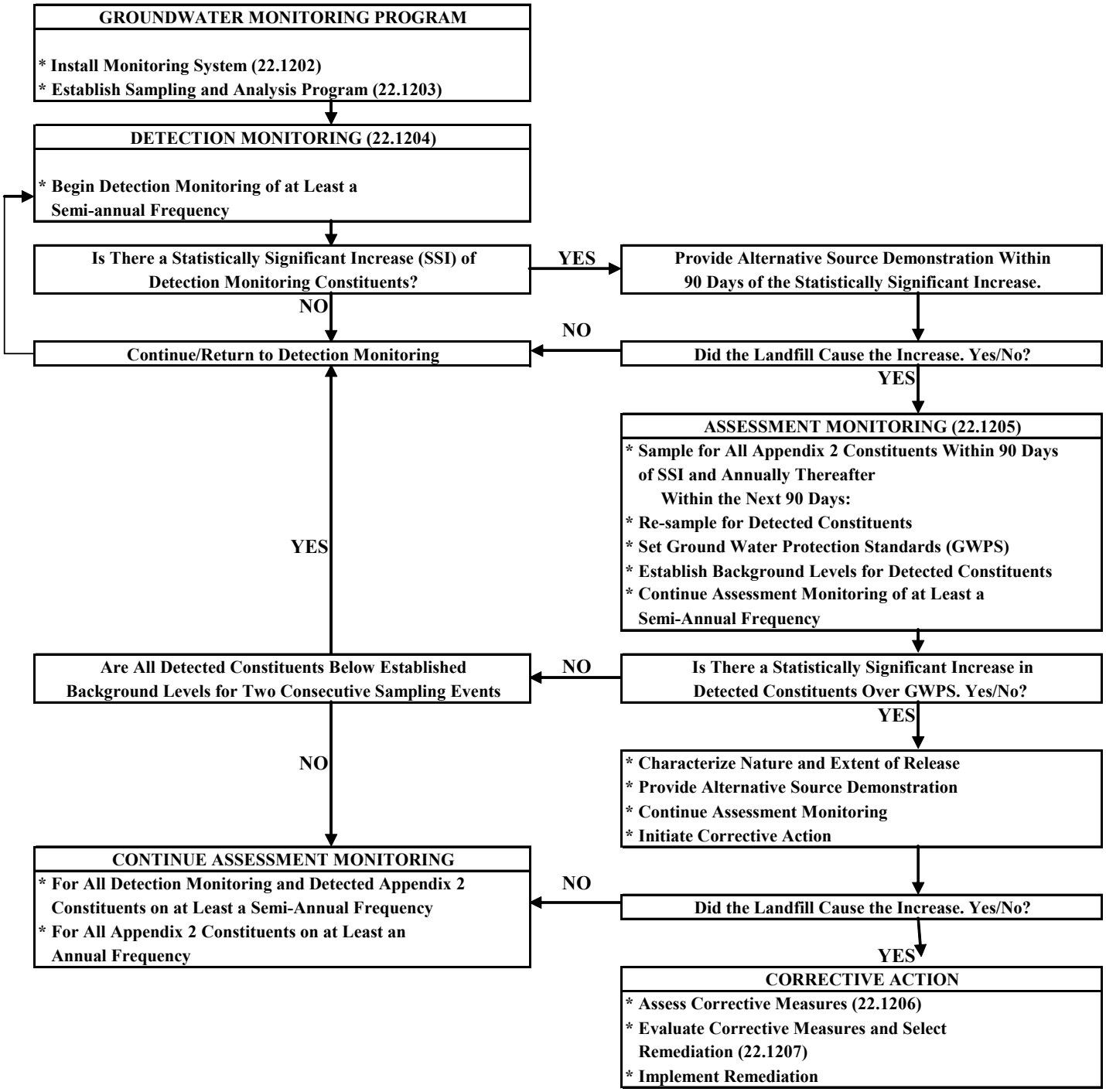
(3) All actions required to complete the remedy have been satisfied.

(f) Certification and Department Notification - Upon completion of the remedy, the owner or operator must notify the Director within fourteen (14) days that a certification that the remedy has been completed in compliance with the requirements of Reg. 22.1208(e) has been placed in the operating record. The certification must be signed by the owner or operator and by a qualified ground-water scientist or approved by the Director.

(g) Release of Financial Assurance - When, upon completion of the certification, the owner or operator determines that the corrective action remedy has been completed in accordance with the requirements under paragraph (e) of this section, the owner or operator shall be released from the requirements for financial assurance for corrective action under Reg. 22.1404.

Figure 12-1

FLOW CHART OF GROUNDWATER MONITORING TO CORRECTIVE ACTION



Chapter 13 Closure And Post-Closure Care

Reg.22.1301- Closure Criteria

(a) Landfill Cover Design - This section applies to all Class 1 landfills that accepted wastes after October 9, 1991 and to all other Class 1, Class 3, and Class 4 landfill units in operation after May 7, 1995. Owners or operators of all landfill units must install a final cover system that is designed to minimize 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. To meet this requirement, a flexible membrane liner shall be incorporated into the final cover design where the bottom liner design includes a composite liner, and

(2) The erosion layer must consist of a minimum 6 inches of earthen material that is capable of sustaining native plant growth.

The final cover system requirements specified above are in addition to any daily or intermediate cover required by this regulation, or any drainage or gas collection layers necessary for proper performance of the cover system.

(b) Alternative Final Cover Design - The Director 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 (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 (a)(2) of this section.

(c) Closure Plans - The owner or operator must prepare a written closure plan that describes the steps necessary to close all landfill units at any point during its active life in accordance with the cover design requirements in (a) or (b) of this section, as applicable. The closure plan, at a minimum, must include the following information:

(1) A description of the final cover, designed in accordance with paragraph (a) or (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 unit ever requiring a final cover 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; and

(4) A schedule for completing all activities necessary to satisfy the closure criteria in this section.

(d) Closure Plan Approval - The owner or operator of all Class 1, Class 3, and Class 4 landfills shall prepare a closure plan meeting the requirements of this Chapter, place the closure plan in the operating record, and submit the closure plan to the Department for approval with the application for a new landfill permit or no later than:

(1) The compliance date specified in Reg.22.103(f) for all Class 1 landfills; or

(2) May 7, 1995 for all Class 3 and Class 4 landfills.

(e) Notification of Closed Landfill or Completed Unit - The landfill owner or operator shall notify the Department when the landfill or a landfill unit stops receiving wastes for disposal and place the notice in the operating record.

(f) Timely Initiation of Closure Required - The owner or operator must begin closure activities of each landfill unit no later than thirty (30) days after:

1. the date on which the unit receives the known final receipt of wastes; or

2. when the unit has reached its final permitted elevations; or

3. if the unit has remaining capacity and there is a reasonable likelihood that the unit will receive additional wastes, no later than one (1) year after the most recent receipt of wastes.

Extensions beyond the one (1) year deadline for beginning closure may be granted by the Director if the owner or operator demonstrates that the unit has the capacity to receive additional wastes and the owner or operator has taken and will continue to take all steps necessary to prevent threats to human health and the environment from the unclosed unit.

(g) Timely Completion of Closure Required - The owner or operator of all landfill units must complete closure activities of each unit in accordance with the approved closure plan within one hundred eighty (180) days following the beginning of closure as specified in paragraph (f) of this section. Extensions of the closure period may be granted by the Director if the owner or operator demonstrates that closure will, of necessity, take longer than one hundred eighty (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.

(h) Proper Grading Required - The entire site shall be graded prior to installation of the cover system so that storm water does not run onto the landfill and so that there are no depressions in the landfill where water can pond. Erosion control measures shall be implemented as necessary to protect the final cover and prevent off-site sedimentation.

(i) Site Survey - Upon completion of the final cover, the site shall be surveyed by a professional land surveyor or professional engineer registered in the State of Arkansas to document the final elevations of the landfill, the location of all surface improvements such as monitoring points, the site boundaries, and the areas that received wastes. Other permanent features such as benchmarks, access roads, buildings, gas monitoring, collection and processing systems, leachate collection, removal and storage systems, and any run-on and run-off control systems should also be shown on the final survey.

(j) Recording of Land Use Restriction - Following closure of all units, the owner or operator shall record a notation on the deed to the landfill facility property, or some other instrument that is normally examined during title search. A copy of the file marked deed notation shall be furnished to the Department and a copy shall be placed in the operating record. The notation on the deed must in perpetuity notify any potential purchaser of the property of:

(1) The past use of the land as a landfill facility;

(2) Future land uses shall comply with Pollution Control and Ecology Commission regulations and shall not disturb the integrity of the final cover system, the liner system, or any other components of the containment or monitoring system ; and

(3) In accordance with A.C.A. § 8-6-1404, it shall be unlawful for any person, partnership, company, corporation or other entity to build, erect, or construct any house, home, or building to be used for a residential purpose .

(4) The land has been used for the disposal of asbestos containing waste material; and

(5) The survey plot and record of the location and quantity of asbestos containing waste disposed of within the disposal site required in Regulation Number 21, Arkansas Asbestos Abatement Regulation, have been filed with the Department.

The owner or operator may request permission from the Director to remove the notation from the deed if all wastes are removed from the facility.

(k) Land Use Restriction Applicability - Restrictions on land uses shall apply only to the area or areas used for the actual disposal of solid waste. The residential land use restriction shall not apply to residential structures that were in existence and in use as of August 13, 1993 or to landfills that stopped accepting waste for disposal prior to August 13, 1968.

(l) Certification of Closure - Following closure of each unit, the owner or operator must furnish the Director a certification, signed by a professional engineer registered in the State of Arkansas, verifying that closure has been completed in accordance with the closure plan, and that this certification has been placed in the operating record. A final closure report shall accompany the certification that includes:

(1) The final survey in accordance with paragraph (i);

(2) Quality control and quality assurance data documenting proper construction and installation of the cover system.

(3) A copy of the deed notation required under paragraph (j).

(4) Other information that the Department may deem necessary to making the certification described in paragraph (h).

(m) Department Certification of Closure - Closure must be timely and approved in writing by the Department if the facility is to be eligible for inclusion under the Arkansas Landfill Post Closure

Trust Fund. Upon written request, the Department will inspect the site for conformance to closure requirements. Department written certification of closure begins the post closure period.

Reg.22.1302- Post Closure Care Requirements

(a) Applicability - The standards of this section shall apply as follows:

(1) Class 1 landfill units that accepted waste for disposal after the compliance dates specified in Reg. 22.103(f) shall meet all of the requirements of this section.

(2) Class 1 landfills that stopped accepting waste for disposal prior to the compliance dates specified in Reg. 22.103(f) and completed installation of the cover system prior to October 9, 1994 shall meet the requirements of paragraphs (b), (c), (d)(3), and (f).

(3) Class 3 and Class 4 landfills that stop accepting waste after May 7, 1995 shall meet all of the requirements of this section.

(b) Post Closure Care Requirements - Following closure of each landfill unit, the owner or operator must conduct post-closure care. Post-closure care shall be conducted for the time periods specified in paragraph (c) of this section, and shall 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, leachate seepage, or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cover and maintaining cover vegetation. Vegetation shall be periodically mowed to control the growth of undesirable vegetation that may interfere with the integrity of the landfill cover or establishment of a perennial vegetative cover and to facilitate inspection of the landfill cover. All cracked, eroded and uneven areas must be filled and reseeded and ditches maintained;

(2) Maintaining and operating the leachate collection system in accordance with the requirements in Reg.22.429. The Director may allow the owner or operator to stop managing leachate if the owner or operator demonstrates that leachate no longer poses a threat to human health and the environment;

(3) Monitoring the ground water in accordance with the requirements of Chapter 12 and maintaining the ground water monitoring system, if applicable;

(4) Maintaining and operating the gas monitoring system in accordance with the requirements of Reg. 22.415;

(5) Maintaining and operating the gas collection and processing system if applicable; and

(6) Maintaining and operating the surface water control systems in accordance with Reg.22.419 and Reg.22.427 or until such time as a permanent erosion control measures have been established at the site.

(c) Post Closure Care Period - Except as provided in Reg.22.1302(c)(4), post closure care shall be conducted for:

(1) Thirty (30) years for Class 1 landfill units that accepted waste for disposal after the compliance dates specified in Reg. 22.103(f);

(2) Two (2) years for Class 1 landfills that stopped accepting waste for disposal prior to the compliance dates specified in Reg. 22.103(f) and completed installation of the cover system prior to October 9, 1994; and

(3) Two (2) years for Class 3 and Class 4 landfills.

(4) The length of the post-closure care period may be:

(i) Decreased by the Director if the owner or operator demonstrates that the reduced period is sufficient to protect human health and the environment and this demonstration is approved by the Director; or

(ii) Increased by the Director if the Director determines that the lengthened period is necessary to protect human health and the environment.

(d) Post Closure Care Plan - The owner or operator of all landfills must prepare a written post closure plan that includes, at a minimum, the following information:

(1) A description of the monitoring and maintenance activities required in (b) of this section for each landfill unit, and the frequency at which these activities will be performed;

(2) Name, address, and telephone number of the person or office to contact about the facility during the post-closure period; and

(3) A description of the planned uses of the property during the post-closure period. (e) Post-Closure Care Plan Approval - The owner or operator of all Class 1, Class 3 and Class 4 landfills shall prepare a post-closure care plan that meets the requirements of this section, place the post closure care plan in the operating record, and submit the post closure care plan to the Department for approval with the application for a new landfill permit, but no later than:

(1) For Class 1 landfills, the compliance dates specified in Reg. 22.103(f) or by the initial receipt of waste, whichever is later; or

(2) For Class 3 and Class 4 landfills, prior to the completion of closure activities described in this Chapter.

(f) Certification of Post Closure Completion - Following completion of the post-closure care period for each landfill unit, the owner or operator shall provide a written certification to the Director, signed by an independent registered professional engineer, verifying that post-closure care has been completed in accordance with the post-closure care plan and shall place the certification in the operating record.

(g) Phasing of Closure and Post Closure Care - Landfill sites that consist of multiple landfill units may, with Department approval, begin the post closure care period on completed landfill units while other landfill units at the site remain active. To qualify for phasing, landfill units must be discrete areas of land that do not share common liner or cover systems. At sites where active disposal operations

continue, landfill units certified by the Department as in the post closure care period shall not be eligible for inclusion in the Post Closure Trust Fund until such time as all active contiguous landfill units are closed and certified by the Department.

(h) Post Closure Land Uses - 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 collection, control, processing, and monitoring systems unless necessary to comply with the requirements in these regulations.

The Director may approve any other disturbance if the owner or operator 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

Reg.22.1303- Closure Of Open Dumps And Unpermitted Facilities

(a) Applicability - The closure of open dumps shall meet the same criteria specified in Reg. 22.1301 unless otherwise specified by the Department

(b) Deed Notation - After Departmental approval of closure of an open dump, the owner or operator shall cause to be recorded at the county courthouse a property use description stating that the property was used as a dump site.

Reg.22.1304- Landfill Post-Closure Clean Up Restrictions

(a) The Landfill Post-closure Trust Fund may be used for landfill post-closure corrective action in accordance with A.C.A. § 8-6-1001 et seq for corrective actions deemed necessary by the Director to prevent or abate contamination of the environment from a formerly permitted landfill which has been certified as properly closed by the department.

(b) Any expenditures in excess of $50,000.00 per site from the Landfill Post-closure Trust Fund, for corrective action for remedy to environmental impacts of closed disposal sites previously operated as a landfill pursuant to state law, will be prioritized and authorized by the Commission, by adoption of a Minute Order, after addressing corrective actions needed to address environmental impacts from permitted landfills closed properly.

Chapter 14 Financial Assurance Criteria

Reg.22.1401- Applicability And Effective Date

(a) General - This Chapter addresses financial assurance requirements for Class 1, 3, and 4 landfill facilities as well as solid waste processing facilities that are required to post financial assurance. Unless otherwise noted in this section, compliance is required on the effective date of the regulation.

(b) Landfills - The requirements of Reg. 22.1402 through Reg.22.1406 apply to the owners and operators of all permitted Class 1, 3, and 4 landfills as provided in 40 CFR § 258.70 except owners or operators who are State or Federal Government Entities whose debts and liabilities are the debts and liabilities of the State or the United States.

(c) Processing Facilities - Owners or operators of solid waste processing facilities that are required by the Director to post financial assurance shall select a financial assurance mechanism from those allowable mechanisms identified in Reg.22.1405 and must comply with the provisions of Reg.22.1406. The closure requirements of Reg.22.1402, the post-closure requirements of Reg.22.1403 and the corrective action requirements of Reg.22.1404 do not apply to solid waste processing facilities. Instead, the owners or operators of solid waste processing facilities must comply with the closure requirements of:

(1) Reg.22.810 for compost facilities;

(2) Reg.22.907 for transfer stations; or

(3) Reg.22.1007 for solid waste recovery facilities.

Reg.22.1402- Financial Assurance For Closure

(a) Closure Cost Estimate - As provided in 40 CFR 258.71, the owner, or operator of all permitted landfill facilities must have and maintain a detailed written estimate, in current dollars, of the cost of hiring a third party to close the largest area of all permitted facilities ever requiring a final cover as required under Reg. 22.1301(c) at any time during the active life in accordance with the closure plan. The owner or operator shall provide the initial and updated estimates to the Director and shall place the estimates in the operating record.

(1) The cost estimate must equal the cost of closing the largest area of all permitted facilities 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, as indicated by its closure plan (see Reg. 22.1301).

(2) During the active life of the permitted facility, the owner or operator must annually adjust the closure cost estimate for inflation.

(3) The owner or operator must increase the closure cost estimate and the amount of financial assurance provided under paragraph (b) of this section if changes to the closure plan or permitted facility conditions increase the maximum cost of closure at any time during the remaining active life.

(4) With Department approval, the owner or operator may reduce the closure cost estimate and the amount of financial assurance provided under paragraph (b) of this section if the cost

estimate exceeds the maximum cost of closure at any time during the remaining life of the permitted facility. The owner or operator must provide the justification to the Director for the reduction of the closure cost estimate and place the justification in the operating record.

(b) Financial Assurance for Closure - The owner or operator of each permitted facility must establish and at all times maintain financial assurance for closure of the permitted facility in compliance with Reg. 22.1405. The owner or operator must provide continuous coverage for closure until released from financial assurance requirements by demonstrating compliance with Reg.22.1301 (l) and (m).

Reg.22.1403- Financial Assurance For Post-Closure Care

(a) Post-Closure Cost Estimate - As provided in 40 CFR 258.72, the owner, or operator of all permitted landfill facilities must have a detailed written estimate, in current dollars, of the cost of hiring a third party to conduct post-closure care for the permitted facility in compliance with the post-closure plan developed under Reg.22.1302(c). The post-closure cost estimate used to demonstrate financial assurance in paragraph (b) of this section must account for the total costs of conducting post-closure care, including annual and periodic costs as described in the post-closure plan over the entire post-closure care period. The owner or operator shall provide the initial and updated estimates to the Director and shall place the estimates 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 permitted facility and during the post-closure care period, the owner or operator must annually adjust the post-closure cost estimate for inflation.

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

(4) With Department approval, the owner or operator may reduce the post-closure cost estimate and the amount of financial assurance provided under paragraph (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 or operator must provide the justification to the Director for the reduction of the closure cost estimate and place the justification in the operating record.

(b) Financial Assurance for Post-Closure - Except as provided in paragraph (c) below, the owner or operator of each permitted facility must establish and at all times maintain, in a manner in accordance with Reg.22.1405, financial assurance for 100% of the costs of post-closure care as required under Reg.22.1302. The owner or operator must provide continuous coverage for post-closure care until released from financial assurance requirements for post-closure care by demonstrating compliance with Reg.22.1302(f).

(c) Post Closure Trust Fund Guarantee - Owners or operators that are required by law to pay disposal fees into the post closure trust fund (Generally, Class 1, Class 3C, and Class 4 landfills) may elect to provide financial assurance in an amount not less than twenty (20) percent of estimated post-closure maintenance costs through a financial mechanism readily negotiable by the department to cash funds (e.g., letter of credit, surety bond, irrevocable trust, insurance, or other mechanism approved by the department) upon default by the owner and operator of post-closure obligations.

(1) If, after proper closure of the landfill, the department reasonably determines that the owner or operator cannot be located or cannot otherwise satisfy, in whole or part, post-closure maintenance obligations, the department is authorized to expend the necessary funds from the Post-Closure Trust Fund to satisfy the requirements of state and federal law for post closure care and to prevent or abate releases to the environment.

(2) If the department is required to expend funds from the Post-Closure Trust Fund due to the failure of an owner or operator to meet the requirements of this subsection, the department shall first pursue collection and recovery of the funds by issuing an Administrative Order notifying the owner or operator by certified mail at the last known address of the owner or operator of the action taken by the department and the amount of funds expended from the Fund, and that the Administrative Order may be appealed in accordance with the Departments regulations.

(3) Nothing contained herein shall be construed to limit the Department's ability to pursue other legal remedies for the recovery of Post-Closure Trust Funds expended on post closure care, or as releasing an owner or operator from performing 100% of its post closure care obligations under this regulation.

Reg.22.1404- Financial Assurance For Corrective Action

(a) Corrective Action Cost Estimate - As provided in 40 CFR 258.73 an owner or operator of a permitted facility required to undertake a corrective action program under Reg.22.1208 of this part 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 Reg.22.1208. 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 or operator must provide the cost estimate to the Director for approval and place the estimate in the operating record.

(1) The owner or operator must annually adjust the estimate for inflation until the corrective action program is completed in accordance with Reg.22.1208.

(2) The owner or operator must increase the corrective action cost estimate and the amount of financial assurance provided under paragraph (b) of this section if changes in the corrective action program or permitted facility conditions increase the maximum costs of corrective action.

(3) The owner or operator may, upon approval by the Director, reduce the amount of the corrective action cost estimate and the amount of financial assurance provided under paragraph (b) of this section if the cost estimate exceeds the maximum remaining costs of corrective action. The owner or operator must provide the justification for the reduction of the corrective action cost estimate and the amount of financial assurance to the Director for approval and place the justification and revised cost estimate in the operating record.

(b) Financial Assurance for Corrective Action - The owner or operator of each permitted facility required to undertake a corrective action program under Reg. 22.1208 must establish, in a manner in accordance with Reg. 22.1405, financial assurance for the most recent corrective action program. The owner or operator must provide continuous coverage for corrective action until released from

financial assurance requirements for corrective action by demonstrating compliance with Reg. 22.1208(f) and (g).

Reg.22.1405- Allowable Mechanisms

As provided in 40 CFR 258.74 the mechanisms used to demonstrate financial assurance under this Chapter 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 and operators must choose from the options specified in paragraphs (a) through (j) of this section. Financial assurance required by this chapter should be filed on forms developed and provided by the department.

(a) Trust Fund

(1) An owner or operator 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 agency. A copy of the trust agreement must be placed in the facility's operating record and provided to the Director for approval.

(2) Payments into the trust fund must be made annually by the owner or operator over the term of the initial permit or over the remaining life of the permitted facility, 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, except as provided in paragraph (j) of this section, divided by the number of years in the pay-in period as defined in paragraph (a)(2) of this section. The amount of subsequent payments must be determined by the following formula:

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

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, except as provided in paragraph (j) of this section, divided by the number of years in the corrective action pay-in period as defined in paragraph (a)(2) of this section. The amount of subsequent payments must be determined by the following formula:

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

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 the effective date of this section (April 9, 1997), whichever is later, in the case of closure and post-closure care, or no later than one hundred twenty (120) days after the corrective action remedy has been selected in accordance with the requirements of Reg. 22.1208.

(6) If the owner or operator 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 this paragraph and (a) of this section, as applicable.

(7) The owner or operator, 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. Within 30 days of disbursement, or an alternative schedule acceptable to the Director, the trustee shall notify the Director of each reimbursement made from the trust fund. The owner or operator shall provide a copy of the documentation of the justification for reimbursement to the Director and place the justification for reimbursement in the operating record.

(8) The trust fund may be terminated by the owner or operator only if the owner or operator 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 Reg.22.1402(b), Reg.22.1403(b), or Reg.22.1404(b).

(b) Surety Bond Guaranteeing Payment or Performance

(1) An owner or operator 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 or operator 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 or before the effective date of this section, (April 9, 1997), whichever is later, in the case of closure and post-closure care, or no later than one hundred twenty (120) days after the corrective action remedy has been selected in accordance with the requirements of Reg. 22.1208. The owner or operator shall provide the bond to the Director for approval and place a copy of the bond 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 (k) of this section.

(3) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

(4) The owner or operator must establish a standby trust fund. The standby trust fund must meet the requirements of (a) of this section except the requirements for initial payment and subsequent annual payments specified in (a)(2), (3), (4) and (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 operator and to the Director one hundred twenty (120) days in advance of cancellation. If the surety cancels the bond, the owner or operator must obtain alternate financial assurance as specified in this section.

(7) The owner or operator may cancel the bond only if alternate financial assurance is substituted as specified in this section or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with.Reg.22.1402(b), 22.1403(b), or 22.1404(b).

(c) Letter of Credit

(1) An owner or operator 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 or before the effective date of this section, (April 9, 1997), whichever is later, in the case of closure and post-closure care, or no later than one hundred twenty (120) days after the corrective action remedy has been selected in accordance with the requirements of Reg.22.1208. The owner or operator shall provide the letter of credit to the Director for approval and place a copy of the letter of credit 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 agency.

(2) A letter from the owner or operator 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, which shall be provided to the Director and shall be placed 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 (a) 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 operator and to the Director one hundred twenty (120) days in advance of cancellation. If the letter of credit is canceled by the issuing institution, the owner or operator must obtain alternate financial assurance.

(4) The owner or operator may cancel the letter of credit only if alternate financial assurance is substituted as specified in this section or if the owner or operator is released from the

requirements of this section in accordance with Reg.22.1402(b), Reg.22.1403(b) or Reg.22.1404(b).

(d) Insurance

(1) An owner or operator 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 or before the effective date of this section, (April 9, 1997), whichever is later. 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 Arkansas. The owner or operator shall provide the insurance policy to the Director for approval and placea copy of the insurance policy in the operating record.

(2) The closure or post-closure care insurance policy must guarantee that funds will be available to close the permitted facility whenever final closure occurs or to provide post-closure care for the permitted facility 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 operator 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 (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 operator, 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 or operator must notify the Director that the documentation of the justification for reimbursement has been placed in the operating record and that reimbursement has been received, and provide of copy of the justification to the Director if requested.

(5) Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided 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 operator and to the Director one hundred twenty (120) days in advance of cancellation. If the insurer cancels the policy, the owner or operator 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 or operator may cancel the insurance policy only if alternate financial assurance is substituted as specified in this section or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with the requirements of Reg.22.1402(b), Reg.22.1403(b) or Reg.22.1404(b).

(e) Corporate Financial Test - An owner or operator that satisfies the requirements of this paragraph may demonstrate financial assurance up to the amount specified in this paragraph (e):

(1) Financial Component

(i) The owner or operator 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; or

(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 or operator 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 (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 or operator's audited financial statements, and subject to the approval of the Director.

(iii) The owner or operator 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 (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 and furnish those records to the Director for approval:

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

a. 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 this part 258, 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

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

(B) A copy of the independent certified public accountant's unqualified opinion of the owner's or operator's financial statements for the latest completed fiscal year. To be eligible to use the financial test, the owner's or operator'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 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 does not allow use of the test, the owner or operator 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 or operator satisfies paragraph (e)(1)(i)(B) or (e)(1)(i)(C) of this section that are different from data in the audited financial statements referred to in paragraph (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 or operator's independent certified public accountant to the owner or operator 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 (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 or operator must place the items specified in paragraph (e)(2)(i) of this section in the operating record, notify the Director that these items have been placed in the operating record, and submit the items to the Director for approval before the initial receipt of waste or before the effective date of the requirements of this section (April 9, 1997), 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 Reg.22.1208.

(iii) After the initial placement of items specified in paragraph (e)(2)(i) of this section in the operating record, the owner or operator must annually update the information, place updated information in the operating record within 90 days following the close of the owner or operator's fiscal year, and furnish the information to the Director for approval. The Director may provide up to an additional 45 days for an owner or operator 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 (e)(2)(i) of this section.

(iv) The owner or operator is no longer required to submit the items specified in this paragraph (e)(2) or comply with the requirements of this paragraph (e) when the owner or operator::

(A) Substitutes alternate financial assurance as specified in this section that is not subject to these recordkeeping and reporting requirements; or

(B) Is released from the requirements of this section in accordance with Reg.22.1402(b), Reg.22.1403(b) or Reg.22.1404(b).

(v) If the owner or operator no longer meets the requirements of paragraph (e)(1) of this section, the owner or operator must, within 120 days following the close of the owner or operator'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 Director that the owner or operator no longer meets the criteria of the financial test and submit the alternate financial assurance for approval.

(vi) The Director may, based on a reasonable belief that the owner or operator may no longer meet the requirements of paragraph (e)(1) of this section, require at any time the owner or operator to provide reports of its financial condition in addition to or including current financial test documentation as specified in paragraph (e)(2) of this section. If the Director finds that the owner or operator no longer meets the requirements of paragraph (e)(1) of this section, the owner or operator

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 paragraph (e), the owner or operator must include cost estimates required for 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.

(e) Local Government Financial Test - An owner or operator may use a financial test to demonstrate financial assurance for closure, post-closure care and corrective action costs up to a specified maximum limit. An owner or operator that satisfies the requirements of paragraphs (1) through (3) of this section may demonstrate financial assurance up to the amount specified in paragraph (4) of this section.

(1) Financial Component

(i) The local government owner or operator must satisfy paragraph A - Bond Rating Requirement or paragraph B - Financial Ratio Alternative of this section in order to qualify to use the financial test.

(A) If the owner or operator 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, As, 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 or operator must satisfy each of the following financial ratios based on the owner or operator's most recent audited annual financial statement:

a. A ratio of cash plus marketable securities to total expenditures greater than or equal to 0.05; and

b. A ratio of annual debt service to total expenditures less than or equal to 0.20.

(ii) The local government owner or operator 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 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 Moodys or BBB as issued by Standard and Poors; 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 Reg.22.1405 (f)(1)(ii). 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 the 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 or operator 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) after the effective date of this section or prior to the initial receipt of waste at the facility, whichever is later. 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 22.1208. 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 or operator must place the following documentation in the facility's operating record and furnish the information to the Director for approval:

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

a. Lists all the current cost estimates covered by a financial test, as described in Reg.22.1405(f)(4) of this section;

b. Provides evidence and certifies that the local government meets the conditions of Reg.22.1405(f)(1)(i), (f)(1)(ii), and (f)(1)(iii); and

c. Certifies that the local government meets the conditions of Reg.22.1405(f)(2), and (f)(4).

(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 Reg.22.1405(f)(1)(i)(B), if applicable, and the requirements of Reg.22.1405(g)(1)(ii)(C) and (D). 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 Reg.22.1405(f)(2) or certification that the requirements of General Accounting Standards Board Statement 18 have been met.

(ii) The items required in Reg.22.1405(f)(3)(i) must be placed in the facility operating record as follows:

(A) In the case of closure and post-closure care, either before the effective date of this section, which is April 9, 1997, or prior to the initial receipt of waste at the facility, whichever is later, 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 Reg.22.1208

(iii) After the initial placement of the items in the facility's operating record, the local government owner or operator must update the information and place the updated

information in the operating record within 180 days following the close of the owner or operator's fiscal year.

(iv) The local government owner or operator is no longer required to meet the requirements of Reg.22.1405(f)(3) when:

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

(B) The owner or operator is released from the requirements of this section in accordance with Reg.22.1402(b), Reg.22.1403(b), or Reg.22.1404(b).

(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 or operator'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 furnish those submissions to the Director for approval, and notify the Director that the owner or operator no longer meets the criteria of the financial test and that alternate assurance has been obtained.

(vi) The Director, based on a reasonable belief that the local government owner or operator 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 or operator 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 care, and corrective action costs for which an owner or operator can assure under this paragraph is determined as follows:

(i) If the local government owner or operator does not assure other environmental obligations through a financial test, it may assure closure, post-closure care, 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 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 care, 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 or operator must obtain an alternate financial assurance instrument for those costs that exceed the limits set in Reg.22.1405(f)(4)(i) and (ii).

(g) Corporate Guarantee

(1) An owner or operator 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 or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a ``substantial business relationship'' with the owner or operator. The guarantor must meet the requirements for owners or operators in paragraph (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 and furnished to the Director for approval 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 or operator, 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 or operator, 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 (April 9, 1997), whichever is later, 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 Reg.22.1208.

(3) The terms of the guarantee must provide that:

(i) If the owner or operator 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 (a) of this section in the name of the owner or operator (payment guarantee).

(ii) The guarantee will remain in force for as long as the owner or operator must comply with the applicable financial assurance requirements of this Section unless the guarantor sends prior notice of cancellation by certified mail to the owner or operator and to the Director. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Director, as evidenced by the return receipts.

(iii) If notice of cancellation is given, the owner or operator must, within 90 days following receipt of the cancellation notice by the owner or operator and the Director, obtain alternate financial assurance, place evidence of that alternate financial assurance in the facility operating record, and submit the alternate financial assurance to the Director for approval. If the owner or operator 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 submit the alternate financial assurance to the Director for approval.

(4) If a corporate guarantor no longer meets the requirements of paragraph (e)(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 submit the alternate financial assurance to the Director for approval. If the owner or operator 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 or operator is no longer required to meet the requirements of this paragraph (g) when:

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

(ii) The owner or operator is released from the requirements of this section in accordance with Reg.22.1402(b), Reg.22.1403(b), or Reg.22.1404(b).

(h) Local Government Guarantee - A local government owner or operator may demonstrate financial assurance for closure, post-closure care, and corrective action, 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) 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 22.1208. The guarantee must provide that:

(i) If the owner or operator 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 Reg.22.1405(a) in the name of the owner or operator.

(ii) The guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Director. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Director, as evidenced by the return receipts.

(iii) If a guarantee is canceled, the owner or operator must, within 90 days following receipt of the cancellation notice by the owner or operator and the Director, obtain alternate financial assurance, place evidence of that alternate financial assurance in the facility operating record, and furnish the alternate financial assurance to the Director for approval. If the owner or operator fails to provide alternate financial assurance within the 90-day period, the guarantor must provide that alternate

assurance within 120 days following the guarantors notice of cancellation, place evidence of the alternate assurance in the facility operating record, and furnish the alternate financial assurance to the Director for approval.

(2) Recordkeeping and Reporting

(i) The owner or operator must place a certified copy of the guarantee along with the items required under Reg.22.1405(f)(3) 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 Reg.22.1208.

(ii) The owner or operator is no longer required to maintain the items specified in Reg.22.1405(h)(2) when:

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

(B) The owner or operator is released from the requirements of this section in accordance with Reg.22.1402(b), Reg.22.1403(b), or Reg.22.1404(b).

(iii) If a local government guarantor no longer meets the requirements of Reg.22.1405(f) 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 furnish the alternate financial assurance to the Director for approval. If the owner or operator fails to obtain alternate financial assurance within that 90-day period, the guarantor must provide that alternate assurance within the next 30 days.

(i) State Approved Mechanism. An owner or operator may satisfy the requirements of this section by obtaining any other mechanism that meets the criteria specified in (l) of this section, and that is approved by the Director.

(j) State Assumption of Responsibility - If the Director either assumes legal responsibility for an owner or operator's compliance with the closure, post-closure care and corrective action requirements of this part, or assures that the funds will be available from State sources to cover the requirements, the owner or operator will be in compliance with the requirements of this section. Any State assumption of responsibility must meet the criteria specified in (l) of this section.

(k) Use of Multiple Financial Mechanisms - An owner or operator may satisfy the requirements of this section demonstrate financial assurance for closure, post-closure, and corrective action, as required by Reg.22.1402, Reg.22.1403, and Reg.22.1404 by establishing more than one financial mechanism per facility , except that mechanisms guaranteeing performance rather than payment, may not be combined with other instruments. The mechanisms must be as specified in paragraphs (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), and k of this section, except that financial assurance for an amount at least equal to the current cost estimate for closure, post-closure care and/or corrective action, may be provided by a combination of mechanisms rather than a single mechanism.

(l) Financial Assurance Sufficiency - The language of the mechanisms listed in paragraphs (a), (b), (c), (d), (e), (f), (g), (h), (i), (j) and (k) 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 or operator by the effective date of these requirements or prior to the initial receipt of solid waste, whichever is later, in the case of closure and post-closure care, and no later than one hundred twenty (120) days after the corrective action remedy has been selected in accordance with the requirements of Reg. 22.1208, until the owner or operator is released from the financial assurance requirements under Reg. 22.1402, Reg. 22.1403 and Reg.22.1404.

(4) The financial assurance mechanisms must be legally valid, binding, and enforceable under State and Federal law.

(m) Use of a Financial Mechanism for Multiple Facilities - The owner or operator may use a single financial assurance mechanism to meet financial assurance requirements for more than one permitted facility located in Arkansas. The mechanism submitted to the Director must include a list showing, for each facility, the permit number, name, address, and amount of funds for closure, and post-closure care or corrective action assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been filed and maintained for each facility. In a financial assurance forfeiture action for any of the facilities covered by the mechanism, the Director may order forfeiture of only the amount of funds designated for that facility, unless the permittee agrees to the use of additional funds available under the mechanism.

(n) Municipality or County Contract of Obligation

(1) A municipality or county may satisfy the requirements of this section by executing a contract of obligation with the Department which conforms to the requirements of this paragraph. The contract of obligation shall be a binding, enforceable, agreement on the municipality or county, allowing the Department to collect the required amount from any funds being disbursed or to be disbursed from the State to the municipality or county.

(2) To assure compliance with paragraph (n) of this section, the maximum amount pledged under the contract of obligation shall not exceed the total amount of general revenue disbursed to the municipality or county in the last fiscal year, or, if approved by the Director, the amount currently projected by the State to be disbursed during the current fiscal year.

(3) The contract of obligation must be irrevocable and issued for a period of at least one year. The contract of obligation must be effective before the initial receipt of waste or before the effective date of this section, (April 9, 1997), whichever is later, in the case of closure and

post-closure care, or no later than one hundred twenty (120) days after the corrective action remedy has been selected in accordance with the requirements of Reg.22.1208.

(4) The owner or operator shall provide the contract of obligation to the Director for approval and place a copy of the contract of obligation in the operating record. Upon execution by the Director, the contract shall be filed with the State Commissioner of Revenues.

(5) The owner or operator may cancel the contract of obligation only if alternate financial assurance is substituted as specified in this section or if the owner or operator is released from the requirements of this section in accordance with Reg.22.1402(b), Reg.22.1403(b) or Reg.22.1404(b).

Reg.22.1406- Financial Assurance Requirements Prior To April 9, 1995 Bankruptcy, Forfeiture, And Permit Transfers

(a) Incapacity of Permittee or Financial Institutions - The permit owner or operator must notify the Director by certified mail of the commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming the permittee as debtor, within ten (10) days after commencement of the proceeding.

The permit owner or operator providing financial assurance by obtaining a surety bond, insurance, trust fund, or letter of credit will be deemed to be without the required financial assurance in the event of bankruptcy of the issuing institution, or a suspension or revocation of the authority of the institution issuing the surety bond, insurance, trust fund, or letter of credit to issue such instruments. The permittee must establish other financial assurance within sixty (60) days after such an event.

(b) Forfeiture of Financial Assurance - The Director may order that any financial assurance filed by the permittee pursuant to this paragraph for closure of a landfill or landfill increment be forfeited to the State if the Director determines that the permittee has failed to perform closure of the landfill or landfill increment in accordance with Reg.22.1301, post closure care of the landfill in accordance with Reg.22.1302, or corrective action in accordance with Reg.22.1208 when required to do so. Any such forfeiture action shall follow the procedures provided in this subparagraph.

(1) Upon determination that the permit owner or operator has failed to perform final closure, post closure care, or corrective action, or in the case of solid waste processing facilities, the clean up and removal of all waste from the site when required to do so, the Director shall cause a notice of violation to be served upon the permittee. Such notice shall be hand delivered or forwarded by certified mail. The notice of violation shall be in accordance with the requirements of Regulation Number 8, Administrative Procedures, and shall specify in what respect the permittee has failed to perform as required. The permittee may request commission review and an adjudicatory hearing of the notice of violation in accordance with Regulation Number 8 and the terms of the notice of violation.

(2) If the Director determines that the permit owner or operator has failed to perform or respond as specified in the notice of violation, The Director may issue a default administrative order of forfeiture of the financial assurance filed to guarantee such performance. Upon issuance, a copy of the order shall be hand delivered or forwarded by certified mail to the owner or operator and to the financial institutions, sureties or parties guaranteeing financial assurance.

(3) Upon the effective date of the order of forfeiture, the Director shall take legal action to collect the forfeiture.

(4) All fortified funds shall be deposited by the Director into the Solid Waste Performance Bond Fund to be utilized by the Director in performing proper closure, post closure care, or corrective action at the facility.

(c) Effect on Transfer of Permits - During permit transfers, existing financial assurance mechanisms and responsibilities shall remain in full force and effect until such time as the proposed new permit owner or operator has filed, in accordance with the requirements of this Chapter, the required replacement financial assurance mechanism(s). When acceptable replacement financial assurance have been filed with the Director, the Director shall cause to be released to the former permit owner or operator (or the issuing institution, if appropriate) the financial assurance that the permit owner or operator had filed.

Chapter 15 Enforcement

Reg 22.1501- Inspection And Enforcement

(a) Authorization to Enter Property - Any duly authorized officer, employee or representative of the Department may enter and inspect any property, premise or place at any reasonable time for the purpose of determining compliance with this Regulation.

(b) Interference with Director or his Agents - Interference with the Director or any authorized employees or agents of the Department in the performance of duties under the Arkansas Solid Waste Management Act, as amended, constitutes a misdemeanor and may, upon conviction, be punished by a criminal penalty of not more than twenty-five thousand dollars ($25000.00), or by imprisonment of not more than one (1) year, or by both.

Reg 22.1502- Violations

(a) Permit Required - No person shall construct, install, alter, modify or operate any solid waste processing or disposal facility or disposal site without a permit from the Department.

(b) Disposal Only at Permitted Facilities - No person shall dispose of solid waste at any disposal site or facility other than a disposal site or facility for which a permit has been issued by the Department, except that any on-site solid waste processing facility (composting) which processes solid waste from an individual household shall not be deemed to constitute a disposal site and shall not be required to obtain a permit, provided such disposal does not create a public or private nuisance or hazard to health or the environment and does not violate a city ordinance or other law and does not involve the open dumping of garbage.

(c) Failure to Comply - Failure of a local government to comply withReg.22.201 et seq.of these regulations requiring an adequate solid waste management system and plan shall constitute a violation subject to the civil penalties authorized by Act 237 of 1971, as amended.

(d) Prohibited Activities - No person shall:

(1) Violate any provision of Act 237 of 1971, as amended, commit any unlawful act under it, or violate any rule, regulation, or order of the Commission or a permit issued under this subchapter by the Department, and leave the state or remove his person from the jurisdiction of this state;

(2) Through the course of activities prohibited by this section, commit a violation of A.C.A. § 8-4-103(a)(2)(A)(i); or

(3) Purposely or knowingly make any false statement, representation or certification in any document required to be maintained under the Act, or falsify, tamper with, or render inaccurate any monitoring device, testing method, or record required to be maintained under the Act or these regulations.

Reg.22.1503- Civil Penalties

(a) Applicability - The Department is authorized to institute a civil action in any court of competent jurisdiction to accomplish any or all of the following:

(1) Restrain any violation of, or compel compliance with, the provisions of the Act and of any rules, regulations, orders, permits, licenses, or plans issued pursuant thereto;

(2) Affirmatively order that remedial measures be taken as may be necessary or appropriate to implement or effectuate the purposes and intent of the Act;

(3) Recover all costs, expenses, and damages to the Department and any other agency or subdivision of the state in enforcing or effectuating the provisions of the Act, including natural resource damages;

(4) Assess civil penalties in an amount not to exceed ten thousand dollars ($10,000) per day for violations of the Act and of any rules, regulations, permits, or plans issued pursuant thereto; or

(5) Recover civil penalties assessed pursuant to subsection (4) of this section.

(b) Fines and Penalties - Any person who violates any provision of this subchapter and regulations, rules, permits, or plans issued pursuant thereto may be assessed an administrative civil penalty not to exceed ten thousand dollars ($10,000) per violation. Each day of a continuing violation may be deemed a separate violation for purposes of penalty assessment. No civil penalty may be assessed until the person charged with the violation has been given the opportunity for a hearing in accordance with regulations adopted by the commission. All hearings and appeals arising under the Act shall be conducted in accordance with the procedures prescribed by §§ 8-4-205, 8-4-212, and 8-4-218 -- 8-4-229. These administrative procedures may also be used to recover all costs, expenses, and damages to the Department and any other agency or subdivision of the state in enforcing or effectuating the provisions of the Act, including natural resource damages.

(c) Alternative Penalty - As an alternative to the limits on civil penalties set in subsections (a) and (b) above, if a person found liable in actions brought under any of the above subsections has derived pecuniary gain from commission of the offenses, then he may be ordered to pay a civil penalty equal to the amount of the pecuniary gain.

Reg.22.1504- Criminal Penalties

(a) Applicability - Any person who violates any provision of the Act, who commits any unlawful act under it, or who violates any rule, regulation or order of the Commission or Department shall be guilty of a misdemeanor. Notwithstanding any other provisions of Arkansas law, upon conviction that person shall be subject to imprisonment for not more than one (1) year or a fine of not more than twenty-five thousand dollars ($25,000), or subject to both such fine and imprisonment. For the purpose of fines only, each day or part of a day during which the violation is continued or repeated shall constitute a separate offense.

(b) Prohibited Activities - It shall be unlawful for a person to:

(1) Violate any provision of the Act, commit any unlawful act under it, or violate any rule, regulation, or order of the Commission or Department, and leave the state or remove his person from the jurisdiction of this state;

(2) Through the course of activities prohibited by this section, commit a violation of § 8-4-103(a)(2)(A)(i); or

(3) Purposely or knowingly make any false statement, representation or certification in any document required to be maintained under this chapter, or falsify, tamper with, or render inaccurate any monitoring device, testing method, or record required to be maintained under the Act or these regulations.

(c) Fines and Penalties - A person who violates this subdivision (b) of this section shall be guilty of a felony. Notwithstanding any other provisions of Arkansas law, upon conviction that person shall be subject to imprisonment for not more than five (5) years or a fine of not more than fifty thousand dollars ($50,000), or subject to both such fine and imprisonment. For the purpose of fines only, each day or part of a day during which the violation is continued or repeated shall constitute a separate offense.

(d) Alternative Penalties - Notwithstanding the limits on fines set in subdivisions (a) and (c) above, if a person convicted under any of the above subdivisions has derived or will derive pecuniary gain from commission of the offenses, then he may be sentenced to pay a fine not to exceed twice the amount of the pecuniary gain.

(e) Solicitation and Conspiracy - Solicitation or conspiracy, as defined by subchapters 3 and 4 of chapter 3 of the Arkansas Criminal Code, to commit any criminal act proscribed by this section and §§ 8-4-103, and 8-7-204 shall be punishable as follows:

(1) Any solicitation or conspiracy to commit an offense under this section which is a misdemeanor shall be a misdemeanor subject to fines not to exceed fifteen thousand dollars ($15,000) per day of violation or imprisonment for more than six (6) months, or both such fine and imprisonment.

(2) Any solicitation or conspiracy to commit an offense under this section which is a felony subject to fines of fifty thousand dollars ($50,000) per day or imprisonment up to five (5) years shall be a felony subject to fines up to thirty-five thousand dollars ($35,000) per day or imprisonment up to two (2) years, or both such fine and imprisonment.

(3) Any solicitation or conspiracy to commit an offense under this section which is a felony subject to fines of one hundred thousand dollars ($100,000) per day or imprisonment up to ten (10) years shall be a felony subject to fines up to seventy-five thousand dollars ($75,000) per day or imprisonment up to seven (7) years, or both such fine and imprisonment.

(4) Any solicitation or conspiracy to commit an offense under this section which is a felony subject to fines of two hundred fifty thousand dollars ($250,000) per day or imprisonment up to twenty (20) years shall be a felony subject to fines up to one hundred fifty thousand dollars ($150,000) per day or imprisonment up to fifteen (15) years, or both such fine and imprisonment.

(f) Restitution/Business Organizations - In cases considering suspension of sentence or probation, efforts or commitments by the defendant to remediate any adverse environmental effects caused by his activities may be considered by the court to be restitution as contemplated by § 5-4-301. A business organization, its agents or officers, may be found liable under this section in accordance with the standards set forth in § 5-2-501 et seq., and sentenced to pay fines in accordance with the provisions of § 5-4-201(d) and (e).

(g) Culpability - The culpable mental states referenced throughout this section shall have the definitions set out in § 5-2-202.

Chapter 16 Other Provisions

Reg.22.1601- Severability

If any provision of these regulations or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications of these regulations which can be given effect without the invalid provision or application, and to this end provisions of these regulations are declared to be severable.

Reg.22.1602- Effective Date

This regulation shall be effective ten (10) days after filing with the Secretary of State, the State Library, and the Bureau of Legislative Research following adoption by the Commission.

APPENDIX 1

Appendix I to Part 258 - Constituents for Detection Monitoring [1]

Common name2 CAS RN3

Common Name	157 CAX RN
Inorganic Constituents:	
(1) Antimony	(Total)
(2) Arsenic	(Total)
(3) Barium	(Total)
(4) Beryllium	(Total)
(5) Cadmium	(Total)
(6) Chromium	(Total)
(7) Cobalt	(Total)
(8) Copper	(Total)
(9) Lead	(Total)
(10) Nickel	(Total)
(11) Selenium	(Total)
(12) Silver	(Total)
(13) Thallium	(Total)
(14) Vanadium	(Total)
(15) Zinc	(Total)
Organic Constituents:	
(16) Acetone	67-64-1
(17) Acrylonitrile	107-13-1
(18) Benzene	71-43-2
(19) Bromochloromethane	74-97-5
(20) Bromodichloromethane	75-27-4
(21) Bromoform; Tribromomethane	75-25-2
(22) Carbon disulfide	75-15-0
(23) Carbon tetrachloride	56-23-5
(24) Chlorobenzene	108-90-7
(25) Chloroethane; Ethyl chloride	75-00-3
(26) Chloroform; Trichloromethane	67-66-3
(27) Dibromochloromethane; Chlorodibromomethane	124-48-1
(28) 1,2-Dibromo-3-chloropropane; DBCP	96-12-8
(29) 1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4
(30) o-Dichlorobenzene; 1,2 Dichlorobenzene -	95-50-1
(31) p-Dichlorobenzene; 1,4 Dichlorobenzene -	106-46-7
(32) trans-1,4-Dichloro-2-butene	110-57-6
(33) 1,1-Dichloroethane; Ethylidene chloride	75-34-3
(34) 1,2-Dichloroethane; Ethylene dichloride	107-06-2
(35) 1,1-Dichloroethylene; 1,1Dichloroethene; Vinylidene chloride -	75-35-4
(36) cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2
(37) trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5
(38) 1,2-Dichloropropane; Propylene dichloride	78-87-5
(39) cis-1,3-Dichloropropene	10061-01-5
(40) trans-1,3-Dichloropropene	10061-02-6
(41) Ethylbenzene	100-41-4
(42) 2-Hexanone; Methyl butyl ketone	591-78-6
(43) Methyl bromide; Bromomethane	74-83-9
(44) Methyl chloride; Chloromethane	74-87-3
(45) Methylene bromide; Dibromomethane	74-95-3
(46) Methylene chloride; Dichloromethane	75-09-2
(47) Methyl ethyl ketone; MEK; 2-Butanone	78-93-3
(48) Methyl iodide; Iodomethane	74-88-4
(49) 4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1
(50) Styrene	100-42-5
(51) 1,1,1,2-Tetrachloroethane	630-20-6
(52) 1,1,2,2-Tetrachloroethane	79-34-5
(53) Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4
(54) Toluene	108-88-3
(55) 1,1,1-Trichloroethane; Methylchloroform	71-55-6
(56) 1,1,2-Trichloroethane	79-00-5
(57) Trichloroethylene; Trichloroethene	79-01-6
(58) Trichlorofluoromethane; CFC-11	75-69-4
(59) 1,2,3-Trichloropropane	96-18-4
(60) Vinyl acetate	108-05-4
(61) Vinyl chloride	75-01-4
(62) Xylenes	1330-20-7
(63) Chloride	
(64) Sulfate	
(65) Total Dissolved Solids	
(66) Specific Conductance (field measurement)	
(67) pH (field measurement)	
(68) Turbidity	

1. This list contains 47 volatile organics for which possible analytical procedures provided in EPA Report SW-846, Test Methods for Evaluating Solid Waste, third edition, November 1986, as revised December 1987, includes Method 8260; and 15 metals for which SW-846 provides either Method 6010 or a method from the 7000 series of methods.
2. Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.
3. Chemical Abstracts Service registry number. Where Total is entered, all species in the ground water that contain this element are included.
4. Practical Quantitation Limit values must not be reported as detection limits. All values above the Method Detection Limit must be reported.

APPENDIX 2 Appendix II to Part 258 - List of Hazardous Inorganic and Organic Constituents [1]

Common Name2 CAS RN3 CASI Suggested PQL methods 3 (τ /L)6

Common Name	CAS RN	Chemical abstracts service index name	Suggested Methods; PQL (τ/L)
Acenaphthene	83-32-9	Acenaphthylene, 1,2-dihydro-	8100 200; 8270 10
Acenaphthylene	208-96-8	Acenaphthylene	8100 200; 8270 10
Acetone	67-64-1	2-Propanone	8260 100
Acetonitrile; Methyl cyanide	75-05-8	Acetonitrile	8015 100
Acetophenone	98-86-2	Ethanone1-phenyl-	8270 10
2-Acetylaminofluorene, 2-AAF	53-96-3	Acetamide N-9H- fluoren-2-yl	8270 20
Acrolein	107-02-8	2-Propenal	8030 5; 8260 100
Acrylonitrile	107-13-1	2-Propenenitrile	8030 5; 8260 200
Aldrin	309-00-2	1,4:5,8- Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1,4,4a,5,8,8a)-	8080 0.05; 8270 10
Allyl chloride	107-05-1	Propene, 3-chloro-	8010 5; 8260 10
4-Aminobiphenyl	92-67-1	1,1^11-Biphenyl]- 4-amine	8270 20
Anthracene	120-12-7	Anthracene	8100 200; 8270 10
Antimony	(Total)	Antimony	6010 300; 7040 2000; 7041 30
Arsenic	(Total)	Arsenic	6010 500; 7060 10; 7061 20
Barium	(Total)	Barium	6010 20; 7080 1000
Benzene	71-43-2	Benzene	8020 2; 8021 0.1; 8260 5
Benzo[a]anthracene Benzanthracene	56-55-3	Benz[a]anthracene	8100 200; 8270 10
Benzo[b]fluoranthene;	205-99-2	Benz[e]acephenanthrylene	8100 200; 8270 10
Benzo[k]fluoranthene	207-08-9	Benzo[k]fluoranthene	8100 200; 8270 10
Benzo[ghi]perylene	191-24-2	Benzo[ghi]perylene	8100 200; 8270 10
Benzo[a]pyrene	50-32-8	Benzo[a]pyrene	8100 200; 8270 10
Benzyl alcohol	100-51-6	Benzenemethanol	8270 20
Beryllium	(Total)	Beryllium	6010 3; 7090 50; 7091 2
alpha-BHC	319-84-6	Cyclohexane, 1,2,3,4,5,6- hexachloro-,(1,2,3,4,5,6)-	8080 0.05; 8270 10
beta-BHC	319-85-7	Cyclohexane, 1,2,3,4,5,6- hexachloro-,(1,2,3,4,5,6)-	8080 0.05; 8270 20
delta-BHC	319-86-8	Cyclohexane, 1,2,3,4,5,6- hexachloro-,(1,2,3,4,5,6)-	8080 0.1; 8270 20
gamma-BHC; Lindane	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1,2,3,4,5,6)-	8080 0.05; 8270 20
Bis-(2-chloroethoxy)methane	111-91-1	Ethane, 1,1^1- [methylenebis(oxy)] bis[2-chloro-	8110 5; 8270 10
Bis(2-chloroethyl) ether; Dichloroethyl ether	111-44-4	Ethane, 1,1^1- oxybis[2-chloro-	8110 3 8270 10
Bis-(2-chloro-1 -methylethyl) ether; 2,2^1-Dichlorodiisopropyl ether; DCIP,See note 7	108-60-1	Propane, 2,2^1- 1- oxybis[1-chloro-	8110 10; 8270 10
Bis(2-ethylhexyl) phthalate	117-81-7	1,2- Benzenedicarboxylic acid, bis(2-ethylhexyl) ester	8060 20
Bromochloromethane Chlorobromomethane	74-97-5	Methane, bromochloro-	8021 0.1/ 8260 5
Bromodichloromethane; Dibromochloromethane	75-27-4	Methane, bromodichloro-	8010 1; 8021 0.2; 8260 5
Bromoform; Tribromomethane	75-25-2	Methane tribromo-	8010 2; 8021 15; 8260 5
4-Bromophenyl phenyl ether	101-55-3	Benzene, 1-bromo-4-phenoxy-	8110 25; 8270 10
Butyl benzyl phthalate; Benzyl butyl phthalate	85-68-7	1,2- Benzenedicarboxyli c acid, butyl phenylmethyl ester	8060 5; 8270 10
Cadmium	(Total)	Cadmium	6010 40; 7130 50; 7131 1
Carbon disulfide	75-15-0	Carbon disulfide	8260 100
Carbon tetrachloride	56-23-5	Methane, tetrachloro-	8010 1; 8021 0.1; 8260 10
Chlordane	See Note 8	4,7-Methano-1H- indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a - hexahydro	8080 0.1; 8270 50;
p-Chloroaniline	106-47-8	Benzenamine, 4-chloro-	8270 20
Chlorobenzene	108-90-7	Benzene, chloro-	8010 2; 8020 2; 8021 0.1; 8260 5
Chlorobenzilate	510-15-6	Benzeneacetic acid, 4-chloro—(4-chlorophenyl)—hydroxy-, ethyl ester	8270 10
p-Chloro-m- cresol; 4-Chloro-3	59-50-7	Phenol, 4-chloro- 3-methyl-	8040 5; 8270 20

APPENDIX 2 Appendix II to Part 258 - List of Hazardous Inorganic and Organic Constituents [1]

Common Name2 CAS RN3 CASI Suggested PQL methods 3 (τ /L)6

Common Name	CAS RN	Chemical abstracts service index name	Suggested Methods; PQL (τ/L)
methylphenol			
Chloroethane; Ethyl chloride	75-00-3	Ethane, chloro-	8010 5; 8021 1; 8260 10
Chloroform; Trichloromethane	67-66-3	Methane, trichloro-	8010 0.5; 8021 0.2; 8260 5
2- Chloronaphthalene	91-58-7	Naphthalene, 2-chloro-	8120 10; 8270 10
2- Chlorophenol	95-57-8	Phenol, 2-chloro-	8040 5; 8270 10
4- Chlorophenyl phenyl ether	7005-72-3	Benzene, 1-chloro-4-phenoxy-	8110 40; 8270 10
Chloroprene	126-99-8	1,3-Butadiene, 2- chloro-	8010 50; 8260 20
Chromium	(Total)	Chromium	6010 70; 7190 500; 7191 10
Chrysene	218-01-9	Chrysene	8100 200; 8270 10
Cobalt	(Total)	Cobalt	6010 70; 7200 500; 7201 10
Copper	(Total)	Copper	6010 60; 7210 200;7211 10
m-Cresol; 3- methylphenol	108-39-4	Phenol, 3-methyl-	8270 10
o-Cresol; 2- methylphenol	95-48-7	Phenol, 2-methyl-	8270 10
p-Cresol; 4- methylphenol	106-44-5	Phenol, 4-methyl-	8270 10
Cyanide	57-12-5	Cyanide	9010 200
2,4-D; 2,4- Dichlorophenoxyacetic acid	94-75-7	Acetic acid, (2,4- dichlorophenoxy-	8150 10
4,4^1-DDD	72-54-8	Benzene 1,1^1- (2,2- dichloroethylidene)bis[4-chloro-	8080 0.1; 8270 10
4,4^1-DDE	72-55-9	Benzene, 1,1^1- (dichloroethyenylidene)bis[4-chloro-	8080 0.05; 8270 10
4,4^1-DDT	50-29-3	Benzene, 1,1^1-(2,2,2- trichloroethylidene)bis[4-chloro-	8080 0.1; 8270 10
Diallate	2303-16-4	Carbamothioic acid, bis(1-methylethyl)-,S-(2,3-dichloro-2-propenyl) ester	8270 10
Dibenz[a,h]anthracene	53-70-3	Dibenz[a,h]anthracene	8100 200; 8270 10
Dibenzofuran	132-64-9	Dibenzofuran	8270 10
Dibromochloromethane; Chlorodibromomethane	124-48-1	Methane, dibromochloro-	8010 1; 8021 0.3; 8260 5
1,2-Dibromo-3- chloropropane; DBCP	96-12-8	Propane, 1,2- dibrome-3-chloro-	8011 0.1; 8021 30; 8260 25
1,2- Dibromoethane; Ethylene dribromide; EDB	106-93-4	Ethane, 1,2- dibromo-	8011 0.1; 8021 10; 8260 5
Di-n-butyl phthalate	84-74-2	1,2- Benzenedicarboxylic acid, dibutyl ester	8060 5; 8270 10
o- Dichlorobenzene;1,2-Dichlorobenzene	95-50-1	Benzene, 1,2- dichloro1-	8010 2; 8020 5; 8021 0.5; 8120 10; 8260 5; 8270 10
m- Dichlorobenzene; 1,3-Dichlorobenzene	541-73-1	Benzene, 1,3- Dichloro-	8010 5; 8020 5; 8021 0.2; 8120 10; 8260 5; 8270 10
p - Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	Benzene, 1,4- dichloro-	8010 2; 8020 5; 8021 0.1; 8120 15 260 5; 8270 10
3,3^1- Dichlorobenzidine	91-94-1	[1,1^1-Biphenyl]- 4,4^1-diamine, 3,3^1-dichloro-	8270 20
trans-1,4- Dichloro-2- butene	110-57-6	2-Butene, 1,4- dichloro-, (E)-	8260 100
Dichlorodifluoro methane; CFC 12;	75-71-8	Methane, dichlorodifluoro-	8021 0.5; 8260 5
1,1-Dichloroethane; Ethyldidene chloride	75-34-3	Ethane, 1,1- dichloro-	8010 1; 8021 0.5; 8260 5
1,2 - Dichloroethane; Ethylene dichloride	107-06-2	Ethane, 1,1- dichloro-	8010 0.5; 8021 0.3; 8260 5
1,1- Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	Ethene, 1,1- dichloro-	8010 1; 8021 0.5; 8260 5
cis-1,2- Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	Ethene, 1,2- dichloro-, (Z)-	8021 0.2; 8260 5
trans-1,2- Dichloroethylene trans-1,2- Dichloroethene	156-60-5	Ethene, 1,2- dichloro-, (E)-	8010 1; 8021 0.5; 8260 5
2,4- Dichlorophenol	120-83-2	Phenol, 2,4- dichloro-	8040 5; 8270 10
2,6- Dichlorophenol	87-65-0	Phenol, 2,6- dichloro-	8270 10
1,2- Dichloropropane; Propylene	78-87-5	Propane, 1,2- dichloro-	8010 0.5; 8021 0.05; 8260 5

APPENDIX 2 Appendix II to Part 258 - List of Hazardous Inorganic and Organic Constituents [1]

Common Name2 CAS RN3 CASI Suggested PQL methods 3 (τ /L)6

Common Name	CAS RN	Chemical abstracts service index name	Suggested Methods; PQL (τ/L)
dichloride			
1,3- Dichloropropane; Trimethylene dichloride	142-28-9	Propane, 1,3- dichloro-	8021 0.3; 8260 5
2,2- Dichloropropane; Isopropylidene chloride	594-20-7	Propane, 2,2- dichloro-	8021 0.5; 8260 15
1,1- Dichloropropene	563-58-6	1-Propene, 1,1- dichloro-	8021 0.2; 8260 5
cis-1,3- Dichloropropene	10061-01-5	1-Propene, 1,3- dichloro-, (Z)-	8010 20; 8260 10
trans-1,3- Dichloropropene	10061-02-6	1-Propene, 1,3- dichloro-, (E)-	8010 5; 8260 10
Dieldrin	60-57-1	2,7:3,6- Dimethanonaphth[2, 3-b]oxirene, 3,4,5,6,9,9-hexa, chloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1a,2,2a,3,6,6a ,7,7a)-	8080 0.05; 8270 10
Diethyl phthalate	84-66-2	1,2- Benzenedicarboxylic acid, diethyl ester	8060 5; 8270 10
0,0-Diethyl 0-2- pyrazinyl phosphorothioate; Thionazin	297-97-2	Phosphorothioic acid, 0,0-diethyl 0-pyrazinyl ester	8141 5; 8270 20
Dimethoate	60-51-5	Phosphorodithioic acid, 0,0-dimethyl S-[2-(methylamino)-2-oxoethyl] ester	8141 3; 8270 20
p- (Dimethylamino) azobenzene	60-11-7	Benzenamine, N,N- dimethyl-4- (phenylazo)-	8270 10
7,12- Dimethylbenz[a] anthracene	57-97-6	Benz[a]anthracene, 7,12-dimethyl-	8270 10
3,3^1- Dimethylbenzidine	119-93-7	[1,1^1-Biphenyl]- 4,4^1-diamine,3,3^1-dimethyl-	8270 10
2,4- Dimethylphenol; m-Xylenol	105-67-9	Phenol, 2,4- dimethyl-	8040 5; 8270 10
Dimethyl phthalate	131-11-3	1,2- Benzenedicarboxylic acid, dimethyl ester	8060 5; 8270 10
m-Dinitrobenzene	99-65-0	Benzene, 1,3- dinitro-	8270 20
4,6-Dinitro-o- cresol 4,6- Dinitro-2- methylphenol	534-52-1	Phenol, 2-methyl-4,6-dinitro	8040 150; 8270 50
2,4- Dinitrophenol;	51-28-5	Phenol, 2,4- dinitro-	8040 150; 8270 50
2,4- Dinitrotoluene	121-14-2	Benzene, 1-methyl-2,4-dinitro-	8090 0.2; 8270 10
2,6- Dinitrotoluene	606-20-2	Benzene, 2-methyl-1,3-dinitro-	8090 0.1; 8270 10
Dinoseb; DNBP; 2- sec-Butyl-4,6-dinitrophenol	88-85-7	Phenol, 2-(1- methylpropyl)-4,6- dinitro-	8150 1; 8270 20
Di-n-octyl phthalate	117-84-0	1,2- Benzenedicarboxylic acid, dioctyl ester	8060 30; 8270 10
Diphenylamine	122-39-4	Benzenamine, N- phenyl-	8270 10
Disulfoton	298-04-4	Phosphorodithioic acid, 0,0-diethyl S-[2- (ethylthio)ethyl ester	8140 2; 8141 0.5; 8270 10
Endosulfan I	959-98-8	6,9-Methano-2,4,3- benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a hexahydro-,3-oxide,	8080 0.1; 8270 20
Endosulfan II	33213-65-9	6,9-Methano-2,4,3- benzodioxathiepin, 6,7,8,9,10,10-hexachloro- 1,5,5a,6,9,9a hexahydro-, 3-oxide, (3,5a,6,9,9a)-	8080 0.05; 8270 20
Endosulfan sulfate	1031-07-8	6,9-Methano-2,4,3- benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a hexahydro-,3-3-dioxide	8080 0.5; 8270 10
Endrin	72-20-8	2,7:3,6- Dimethanonaphth[2, 3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7 a-octahydro-, (1a, 2,2a,3,6,6a,7,7a)-	8080 0.1; 8270 20
Endrin aldehyde	7421-93-4	1,2,4- Methenocyclopenta[cd]pentalene-5-carboxaldehyde,2,2a,3,3,4,7-hexachlorodecahydro-,(1,2,2a,4,4a,5,6a,6b,7R*)-	8080 0.2; 8270 10
Ethylbenzene	100-41-4	Benzene, ethyl-	8020 2; 8221 0.05; 8260 5
Ethyl methacrylate	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester	8015 5; 8260 10; 8270 10
Ethyl methanesulfonate	62-50-0	Methanesulfonic acid, ethyl ester	8270 20
Famphur	52-85-7	Phosphorothioic acid, 0-[4-[(dimethylamino)sulfonyl]phenyl] 0,0-dimethyl ester	8270 20
Fluoranthene	206-44-0	Fluoranthene	8100 200; 8270 10

APPENDIX 2 Appendix II to Part 258 - List of Hazardous Inorganic and Organic Constituents [1]

Common Name2 CAS RN3 CASI Suggested PQL methods 3 (τ /L)6

Common Name	CAS RN	Chemical abstracts service index name	Suggested Methods; PQL (τ/L)
Fluorene	86-73-7	9H-Fluorene	8100 200; 8270 10
Heptachlor	76-44-8	4,7-Methano-1H- indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a tetrahydro-	8080 0.05; 8270 10
Heptachlor epoxide	1024-57-3	2,5-Methano-2H- indeno[1,2- b]oxirene,2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a hexahydro-,(1a,1b, 2, 5, 5a, 6, 6a)	8080 1; 8270 10
Hexachlorobenzene	118-74-1	Benzene, hexachloro-	8120 0.5; 8270 10
Hexachlorobutadiene	87-68-3	1,3-Butadiene, 1,1,2,3,4,4- hexachloro-	8021 0.5; 8120 5; 8260 10; 8270 10
Hexachlorocyclopentadiene	77-47-4	1,3- Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	8120 5; 8270 10
Hexachloroethane	67-72-1	Ethane, hexachloro-	8120 0.5; 8260 10; 8270 10
Hexachloropropene	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-	8270 10
2-Hexanone; Methyl butyl ketone	591-78-6	2-Hexanone	8260 50
Indeno(1,2,3- cd)pyrene	193-39-5	Indeno(1,2,3- cd)pyrene	8100 200; 8270 10
Isobutyl alcohol	78-83-1	1-Propanol, 2- methyl-	8015 50; 8240 100
Isodrin	465-73-6	1,4,5,8- Dimethanonaphthalene,1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a hexahydro-(1,4,4a,5,8,8a)-	8270 20; 8260 10
Isophorone	78-59-1	2-Cyclohexen-1- one, 3,5,5- trimethyl-	8090 60; 8270 10
Isosafrole	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-	8270 10
Kepone	143-50-0	1,3,4-Metheno-2H- cyclobuta[cd]pentalen-2-one,1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-	8270 20
Lead	(Total)	Lead	6010 400; 7420 1000 7421 10
Mercury	(Total)	Mercury	7470 2
Methacrylonitrile	126-98-7	2-Propenenitrile, 2-methyl-	8015 5; 8260 100
Methapyrilene	91-80-5	1,2- Ethanediamine, N.Ndimethyl-N^1-2-pyridinyl-N1/2-thienylmethyl)-	8270 100
Methoxychlor	72-43-5	Benzene,1,1^1- (2,2,2,trichloroet hylidene)bis[4-methoxy-	8080 2; 8270 10
Methyl bromide; Bromomethane	74-83-9	Methane, bromo-	8010 20; 8021 10
Methyl chloride; Chloromethane	74-87-3	Methane, chloro-	8010 1; 8021 0.3
3- Methylcholanthrene	56-49-5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	8270 10
Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	2-Butanone	8015 10; 8260 100
Methyl iodide; Iodomethane	74-88-4	Methane, iodo-	8010 40; 8260 10
Methyl methacrylate	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester	8015 2; 8260 30
Methyl methanesulfonate	66-27-3	Methanesulfonic acid, methyl ester	8270 10
2- Methylnaphthalene	91-57-6	Naphthalene, 2- methyl-	8270 10
Methyl parathion; Parathion methyl	298-00-0	Phosphorothioic acid, 0,0-dimethyl	8140 0.5; 8141 1; 8270 10
4-Methyl-2- pentanone; Methyl isobutyl ketone	108-10-1	2-Pentanone, 4- methyl-	8015 5; 8260 100
Methylene bromide; Dibromomethane	74-95-3	Methane, dibromo-	8010 15; 8021 20; 8260 10
Methylene chloride; Dichloromethane	75-09-2	Methane, dichloro-	8010 5; 8021 0.2; 8260 10
Naphthalene	91-20-3	Naphthalene	8021 0.5; 8100 200; 8260 5; 8270 10
1,4- Naphthoquinone	130-15-4	1,4- Naphthalenedione	8270 10
1-Naphthylamine	134-32-7	1-Naphthalenamine	8270 10

APPENDIX 2 Appendix II to Part 258 - List of Hazardous Inorganic and Organic Constituents [1]

Common Name2 CAS RN3 CASI Suggested PQL methods 3 (τ /L)6

Common Name	CAS RN	Chemical abstracts service index name	Suggested Methods; PQL (τ/L)
2-Naphthylamine	91-59-8	2-Naphthalenamine	8270 10
Nickel	(Total)	Nickel	6010 150; 7520 400
o-Nitroaniline; 2-Nitroaniline	88-74-4	Benzenamine, 2- nitro	8270 50
m-Nitroaniline; 3-Nitroanile	99-09-2	Benzenamine, 3- nitro	8270 50
p-Nitroaniline; 4-Nitroaniline	100-01-6	Benzenamine, 4- nitro	8270 20
Nitrobenzene	98-95-3	Benzene, nitro-	8090 40; 8270 10
o-Nitrophenol; 2- Nitrophenol	88-75-5	Phenol, 2-nitro-	8040 5; 8270 10
p-Nitrophenol; 4- Nitrophenol	100-02-7	Phenol, 4-nitro-	8040 10; 8270 50
N-Nitrosodi-n- butylamine	924-16-3	1-Butanamine, N- butyl-N-nitroso-	8270 10
N- Nitrosodiethylamine	55-18-5	Ethanamine, N- ethyl-N-nitroso-	8270 20
N- Nitrosodimethylamine	62-75-9	Methanamine, N- methyl-N-nitroso	8070 2
N- Nitrosodiphenylamine	86-30-6	Benzenamine, N- nitroso-N-phenyl-	8070 5
N- Nitrosodipropylamine N-Nitroso-N-dipropylamine;Di-n-propylnitrosamine	621-64-7	1-Propanamine, N- nitroso-N-propyl;	8070 10
N- Nitrosomethylethalamine	10595-95-6	Ethanamine, N- methyl-N-nitroso	8270 10
N- Nitrosopiperidine	100-75-4	Piperidine, 1- nitroso-	8270 20
N- Nitrosopyrrolidine	930-55-2	Pyrrolidine, 1- nitroso-	8270 40
5-Nitro-o- toluidine	99-55-8	Benzenamine, 2- methyl-5-nitro-	8270 10
Parathion	56-38-2	Phosphorothioic acid, 0,0-diethyl 0-(4-nitrophenyl) ester	8141 0.5; 8270 10
Pentachlorobenzene	608-93-5	Benzene, pentachloro-	8270 10
Pentachloronitro benzene	82-68-8	Benzene, pentachloronitro	8270 20
Pentachlorophenol	87-86-5	Phenol, pentachloro-	8040 5; 8270 50
Phenacetin	62-44-2	Acetamide, N-(4- ethoxyphenyl)	8270 20
Phenanthrene	85-01-8	Phenanthrene	8100 200; 8270 10
Phenol	108-95-2	Phenol	8040 1
p- Phenylenediamine	106-50-3	1,4- Benzenediamine	8270 10
Phorate	298-02-2	Phosphorodithioic acid, 0,0-diethyl S-[(ethylthio)methyl] ester	8140 2; 8141 0.5; 8270 10
Polychlorinated biphenyls; PCBs; Aroclors	See Note 9	1,1'-Biphenyl, chloro derivatives	8080 50; 8270 200
Pronamide	23950-58-5	Benzamide, 3,5- dichloro-N-(1,1-dimethyl-2-propynyl)-	8270 10
Propionitrile; Ethyl cyanide	107-12-0	Propanenitrile	8015 60; 8260 150
Pyrene	129-00-0	Pyrene	8100 200; 8270 10
Safrole	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-	8270 10
Selenium	(Total)	Selenium	6010 750; 7740 20; 7741 20
Silver	(Total)	Silver	6010 70; 7760 100; 7761 10
Silvex; 2,4,5-TP	93-72-1	Propanoic acid, 2- (2,4,5-trichlorophenoxy)-	8150 2
Styrene	100-42-5	Benzene, ethenyl-	8020 1; 8021 0.1; 8260 10
Sulfide	18496-25-8	Sulfide	9030 4000
2,4,5-T; 2,4,5- Trichlorophenoxy acetic acid	93-76-5	Acetic acid, (2,4,5- trichlorophenoxy)-	8150 2
1,2,4,5- Tetrachlorobenzene	95-94-3	Benzene, 1,2,4,5- tetrachloro-	8270 10
1,1,1,2- Tetrachloroethane	630-20-6	Ethane, 1,1,1,2- tetrachloro-	8010 5; 8021 0.05; 8260 5
1,1,2,2- Tetrachloroethne	79-34-5	Ethane, 1,1,2,2- tetrachloro-	8010 0.5; 8021 0.1; 8260 5
Tetrachloroethylene Tetrachloroethene; Perchloroethylene	127-18-4	Ethene, tetrachloro-	8010 0.5; 8021 0.5; 8260 5
2,3,4,6- Tetrachlorophenol	58-90-2	Phenol, 2,3,4,6- tetrachloro-	8270 10
Thallium	(Total)	Thallium	6010 400; 7840 1000; 7841 10
Tin	(Total)	Tin	6010 40
Toluene	108-88-3	Benzene, methyl-	8020 2; 8021 0.1; 8260 5
o-Toluidine	95-53-4	Benzenamine, 2- methyl-	8270 10
Toxaphene	See Note 10	Toxaphene	8080 2
1,2,4- Trichlorobenzene	120-82-1	Benzene, 1,2,4- trichloro-	8021 0.3; 8120 0.5; 8260 10; 8270 10
1,1,1- Trichloroethane;	71-55-6	Ethane, 1,1,1- trichloro-	8010 0.3; 8021 0.3; 8260 5

APPENDIX 2 Appendix II to Part 258 - List of Hazardous Inorganic and Organic Constituents [1]

Common Name2 CAS RN3 CASI Suggested PQL methods 3 (τ /L)6

Common Name	CAS RN	Chemical abstracts service index name	Suggested Methods; PQL (τ/L)
Methylchloroform			
1,1,2- Trichloroethane	79-00-5	Ethane, 1,1,2- trichloro-	8010 0.2; 8260 5
Trichloroethylene; Trichloroethene	79-01-6	Ethene, trichloro-	8010 1; 8021 0.2; 8260 5
Trichlorofluoromethane; CFC-11	75-69-4	Methane, trichlorofluoro-	8010 10; 8021 0.3; 8260 5
2,4,5- Trichlorophenol	95-95-4	Phenol, 2,4,5- trichloro-	8270 10
2,4,6- Trichlorophenol	88-06-2	Phenol, 2,4,6- trichloro-	8040 5; 8270 10
1,2,3- Trichloropropane	96-18-4	Propane, 1,2,3- trichloro-	8010 10; 8021 5; 8260 15
0,0,0- Triethyl phosphorothioate	126-68-1	Phosphorothioic acid, 0,0,0-triethylester	8270 10
sym- Trinitrobenzene	99-35-4	Benzene, 1,3,5- trinitro-	8270 10
Vanadium	(Total)	Vanadium	6010 80; 7910 2000; 7911 40
Vinyl acetate	108-05-4	Acetic acid, ethenyl ester	8260 50
Vinyl chloride; Chloroethene	75-01-4	Ethene, chloro-	8010 2; 8021 0.4; 8260 10
Xylene(total)	See Note11	Benzene, dimethyl-	8020 5; 8021 0.2; 8260 5
Zinc	(Total)	Zinc	6010 20; 7950 50; 7951 0.5

Notes

1. The regulatory requirements pertain only to the list of substances; the right hand columns (Methods and PQL) are given for informational purposes only. See also footnotes 5 and 6.
2. Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.
3. Chemical Abstracts Service registry number. Where Total is entered, all species in the ground water that contain this element are included.
4. CAS index are those used in the 9th Collective Index.
5. Suggested Methods refer to analytical procedure numbers used in EPA Report SW-846 Test Methods for Evaluating Solid Waste, third edition, November 1986, as revised, December 1987. Analytical details can be found in SW-846 and in documentation on file at the agency. CAUTION: The methods listed are representative SW-846 procedures and may not always be the most suitable method(s) for monitoring an analyte under the regulations.
6. Practical Quantitation Limits (PQLs) are the lowest concentrations of analytes in ground waters that can be realiably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions. The PQLs listed are generally stated to one significant figure. PQLs are based on 5 mL samples for volatile organics and 1 L samples for semivolatile organics. CAUTION: The PQL values in many cases are based only on a general estimate for the method and not on a determination for individual compounds; PQLs are not a part of the regulation.
7. This substance is often called Bis(2-chloroisopropyl) ether, the name Chemical Abstracts Service applies to its noncommercial isomer, Propane, 2,2-oxybis[2-chloro- (CAS RN 39638-32-9).
8. Chlordane: This entry includes alpha-chlordane (CAS RN 5103- 71-9), beta-chlordane (CAS RN 5103-74-2), gamma-chlordane (CAS RN 5566-34-7), and constituents of chlordane (CAS RN 57-74-9 and CAS RN 12789-03-6). PQL shown is for technical chlordane. PQLs of specific isomers are about 20 (r)g/L by method 8270.
9. Polychlorinated biphenyls (CAS RN 1336-36-3); this category contains congener chemicals, including constituents of Aroclor 1016 CAS RN 12674-11-2), Aroclor 1221 (CAS RN 11104-28-2), Aroclor 1232 (CAS RN 11141-16-5), Aroclor 1242 (CAS RN 53469-21-9), Aroclor 1248 (CAS RN 12672-29-6), Aroclor 1254 (CAS RN 11097- 69-1), and Aroclor 1260 (CAS RN 11096-82-5). The PQL shown is an average value for PCB congeners.
10. Toxaphene: This entry includes congener chemicals contained in technical toxaphene (CAS RN 8001-35-2), i.e., chlorinated camphene.
11. Xylene (total): This entry includes o-xylene (CAS RN 96-47-6), m-xylene (CAS RN 108-38-3), p-xylene (CAS RN 106-42-3), and unspecified xylenes (dimethylbenzenes) (CAS RN 1330-20-7). PQLs for method 8021 are 0.2 for o-xylene and 0.1 for m- or p-xylene. The PQL for m-xylene is 2.0 (r)g/L by method 8020 or 8260.

APPENDIX 3- Maximum Contaminant Levels (MCLs)

The maximum contaminant levels promulgated herein are for use in determining whether solid waste disposal activities comply with the ground-water criteria (40 CFR 257.3-4) for Class 3, Class 4 and other solid waste facilities and practices. Monitoring of other parameters may be required based on specific waste characteristics.

Chemical	CAS No.	MCL (mg/l)	Chemical	CAS No.	MCL (mg/l)
Arsenic	7440-38-2	0.05	Lindane	58-89-9	0.004
Barium	7440-39-3	1.0	Lead	7439-92-1	0.05
Benzene	71-343-2	0.005	Mercury	7439-97-6	0.002
Cadmium	7440-43-9	0.01	Methoxychlor	72-43-5	0.1
Carbon tetrachloride	56-23-5	0.005	Nitrate		10.0
Chromium (hexavalent)	7440-47-3	0.05	Selenium	7782-49-2	0.01
2,4-Dichlorophenoxy acetic acid	94-75-7	0.1	Silver	7440-22-4	0.05
1,4-Dichlorobenzene	106-46-7	0.075	Toxaphene	8001-35-2	0.005
1,2-Dichloroethane	107-06-2	0.005	1,1,1-Trichloroethane	71-55-6	0.2
1,1-Dichloroethylene	75-35-4	0.007	Trichloroethylene	79-01-6	0.005
Endrin	75-20-8	0.0002	2,4,5-Trichlorophenoxy acetic acid	93-76-5	0.01
Fluoride	7	4.0	Vinyl chloride	75-01-4	0.002