
Solid Waste Management Facilities
Chapter 17-701, F.A.C.
Department of Environmental Regulation
Effective 01/06/1993

Effective 1-6-1993

DER 1993 SOLID WASTE MANAGEMENT FACILITIES 17-701

CHAPTER 17-701
SOLID WASTE MANAGEMENT FACILITIES

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17-701.001 Declaration and Intent.

Specific Authority: 403.061, 403.704, F.S.

Law Implemented: 403.021, 403.061, 403.087, 403.701 through 403.8055, F.S.

History: New 10-1-74; Amended 5-24-79; Previously Numbered as 17-7.01; Formerly 17-7.001, Amended 6-25-90, Repealed 1-6-93

17-701.020 Definitions.

History: Transferred from 10D-12.02, 10-1-74; Revised

7-20-76; Amended 5-24-79, 6-13-84, 4-25-85, 7-1-85;

Previously Numbered as 17-7.02; Amended 12-10-85; Formerly 17-7.020; Amended 8-2-89, 6-25-90. Transferred to

17-701.200.

17-701.030 Solid Waste Management Permit Requirements.

Specific Authority: 403.061, 403.704, F.S.

Law Implemented: 403.021, 403.061, 403.087, 403.702, 403.704, 403.705, 403.707, 403.708, F.S.

History: Transferred from 10-D12.03, 10D-12.04, 10D-12.07, 10-1-74; Amended 5-24-79, 6-13-84, 7-1-85; Previously Numbered as 17-7.03; Amended 12-10-85; Formerly 17-7.030, Amended 6-25-90, Repealed 1-6-93.

17-701.040 Prohibitions.

Specific Authority: 403.061, 403.704, F.S.

Law Implemented: 403.021, 403.061, 403.087, 403.702, 403.704, 403.705, 403.707, 403.708, F.S.

History: Transferred from 10D-12.06, 10D-12.07, 10-1-74; Amended 5-24-79, 5-27-82; Previously Numbered as 17-7.04; Amended 12-10-85; Formerly 17-7.040; Amended 6-25-90, Transferred to 17-701.300.

17-701.050 Sanitary Landfill Criteria.

Specific Authority: 403.061, 403.704, F.S.

Law Implemented: 403.702, 403.704, 403.705, 403.707, 403.708, F.S.

History: Transferred from 10D-12.07, 10-1-74; Revised 5-11-75, 7-20-76; Amended 5-24-79; Previously Numbered as 17-7.05; Amended 12-10-85; Formerly 17-7.050; Amended: 7-19-90, Repealed 1-6-93.

17-701.060 Special Waste Handling.

Specific Authority: 403.061, 403.704, 403.705, 403.8055, F.S.

Law Implemented: 403.021, 403.061, 403.087, 403.702, 403.704, 403.705, 403.707, 403.708, F.S.

17-701.001 - 17-701.060

History: Transferred from 10D-12.07, 10-1-74; Amended 5-24-79, 11-25-82, 7-10-84; Previously Numbered as 17-7.06; Amended 12-10-85; Formerly 17-7.060, Transferred to 17-701.520.

17-701.061 Construction and Demolition Debris Disposal
Specific Authority: 403.061, 403.704, 403.707, F.S.
Law Implemented: 403.706, 403.707, F.S.
History: New 8-2-89, Transferred to 17-701.730.

17-701.070 Closure of Landfills.
Specific Authority: 403.061, 403.704, F.S.
Law Implemented: 403.021, 403.061, 403.087, 403.702, 403.704, 403.705, 403.707, 403.708, F.S.
History: New 10-1-74; Amended 5-24-79, 7-1-85; Previously Numbered as 17-7.07; Amended 12-10-85; Formerly 17-7.070, Repealed 1-6-93.

17-701.071 Closure Schedule.
Specific Authority: 403.704, F.S.
Law Implemented: 403.704, 403.707, F.S.
History: New 7-1-85; Formerly 17-7.071, Repealed 1-6-93.

17-701.072 Closure Permit Application Submittal.
Specific Authority: 403.704, F.S.
Law Implemented: 403.704, 403.707, F.S.
History: New 7-1-85; Formerly 17-7.072, Repealed 1-6-93.

17-701.073 Closure Plan Requirements.
Specific Authority: 403.704, F.S.
Law Implemented: 403.704, 403.707, F.S.
History: New 7-1-85; Formerly 17-7.073, Repealed 1-6-93.

17-701.074 Closure Procedures.
Specific Authority: 403.704, F.S.
Law Implemented: 403.704, 403.707, F.S.
History: New 7-1-85; Formerly 17-7.074, Transferred to 17-701.610.

17-701.075 Long Term Care.
Specific Authority: 403.704, F.S.
Law Implemented: 403.704, 403.707, F.S.
History: New 7-1-85, Formerly 17-7.075, Transferred to 17-701.630.

17-701.076 Financial Responsibility.
Specific Authority: 403.704, F.S.
Law Implemented: 403.704, 403.707, F.S.
History: New 7-1-85; Formerly 17-7.076, Amended 11-28-89, Transferred to 17-701.630.

17-701.060(Cont'd.) - 17-701.076(History)

17-701.077 Permit Application Requirements.

Specific Authority: 403.704, F.S.

Law Implemented: 403.704, 403.707, F.S.

History: New 7-1-85; Transferred to 17-701.030(3), 12-10-85.

17-701.078 Approval of Alternative Procedures and Requirements.

Specific Authority: 403.704, F.S.

Law Implemented: 403.704, 403.707, F.S.

History: New 7-1-85; Amended 12-10-85; Formerly 17-7.078, Transferred to 17-701.310.

17-701.080 Supervision and Inspection.

Specific Authority: 403.061, F.S.

Law Implemented: 403.021, 403.031, 403.061, 403.087, 403.701 through 403.713, F.S., Chapter 74-342.

History: Transferred from 10D-12.07, 10-1-74; Previously Numbered as 17-7.08; Formerly 17-7.080, Repealed 1-6-93.

17-701.090 Volume Reduction Plants.

Specific Authority: 403.061, 403.704, F.S.

Law Implemented: 403.021, 403.061, 403.087, 403.702, 403.704, 403.705, 403.707, 403.708, F.S.

History: New 10-1-74; Amended 5-24-79; Previously Numbered as 17-7.09; Formerly 17-7.090, Repealed 1-6-93.

17-701.091 Transfer Stations.

Specific Authority: 403.061, 403.7044, F.S.

Law Implemented: 403.021, 403.061, 403.087, 403.702, 403.704, 403.705, 403.707, 403.708, F.S.

History: New 5-24-79; Formerly 17-7.091, Repealed 1-6-93.

17-701.100 Intent.

The intent of this rule is to establish standards for the construction, operation, and closure of solid waste management facilities to minimize their threat to public health and the environment, and to implement the provisions of the Florida Solid Waste Management Act, Sections 403.701-403.715, Florida Statutes.

Specific Authority: 403.061, 403.704, F.S.

Laws Implemented: 403.021, 403.061, 403.087, 403.701 through 403.717, F.S.

History: New 1-6-93.

17-701.120 Notification of Disposal Activity.

Specific Authority: 403.061, 403.704, F.S.

Law Implemented: 403.707, F.S.

History: New 6-13-84; Amended 4-25-85; Previously Numbered as 17-7.12; Formerly 17-7.120, Repealed 1-6-93.

17-701.077 - 17-701.120

17-701.130 Forms.

Specific Authority: 120.53(1), 403.061, F.S.

Law Implemented: 120.53(1), 120.55, 403.0875, 403.7125, F.S.

History: New 11-30-82; Amended 6-16-84, 9-12-84, 2-25-85, 7-1-85; Formerly 17-1.206 and Amended 12-10-85; Formerly 17-7.130, Amended 11-28-89, Repealed 1-6-93.

17-701.200 Definitions. The following words, phrases or terms as used in this chapter, unless the context indicates otherwise, shall have the following meaning:

(1) "Agricultural wastes" means the solid wastes resulting from normal farming operations, the raising and slaughtering of animals, and the processing of animal products, orchard, and field crops, which are stored, transported, or disposed of as an unwanted waste material.

(2) "Air quality standards" means, unless otherwise specified, those standards set forth in Chapter 17-272, F.A.C.

(3) "ASTM" means the American Society for Testing and Materials.

(4) "Aquifer" means a geologic formation, group of formations, or part of a formation capable of yielding a significant amount of ground water to wells, springs, or surface water.

(5) "Biohazardous waste" has the meaning given it in Rule 17-712.200, F.A.C.

(6) "Biological waste" has the meaning given it in Rule 17-712.200, F.A.C.

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

(8) "Bulky wastes" means items whose large size or weight precludes or complicates their handling by normal collection, processing, or disposal methods.

(9) "Cell" means a volume of solid waste received since the last previous application of initial cover. The compacted waste and subsequent initial cover constitute a cell which usually contains wastes deposited in one day.

(10) "Clean debris" means any solid waste which is virtually inert, which is not a pollution threat to ground water or surface waters, is not a fire hazard, and is likely to retain its physical and chemical structure under expected conditions of disposal or use. The term includes brick, glass, ceramics, and uncontaminated concrete including embedded pipe or steel.

(11) "Closing" means the time at which a solid waste management facility ceases to accept wastes, and includes those actions taken by the owner or operator of the facility to prepare the facility for any necessary monitoring and maintenance after closing.

17-701.130 - 17-701.200(11)

(12) "Closure" means the cessation of operation of a solid waste management facility and the act of securing such a facility so that it will pose no significant threat to human health or the environment. This includes closing, long term monitoring, maintenance, and financial responsibility.

(13) "Cm/sec" means centimeters per second.

(14) "Compost" has the meaning given it in Rule 17-709.200, F.A.C.

(15) "Composting" has the meaning given it in Rule 17-709.200, F.A.C.

(16) "Composite liner" means a liner comprised of a geomembrane, which is underlain and in direct contact with a soil component.

(17) "Construction and demolition debris" means materials generally considered to be not water soluble and non-hazardous in nature, including but not limited to steel, glass, brick, concrete, asphalt roofing material, pipe, gypsum wallboard, and lumber, from the construction or destruction of a structure as part of a construction or demolition project or from the renovation of a structure. The term includes rocks, soils, tree remains, trees, and other vegetative matter which normally results from land clearing or land development operations for a construction project. Mixing of construction and demolition debris with other types of solid waste, including material which is not from the actual construction or destruction of a structure, will cause it to be classified as other than construction and demolition debris.

(18) "Department" means the State of Florida Department of Environmental Regulation.

(19) "Design period" means the operating life of the solid waste management facility plus any long-term care period after closing.

(20) "Disposal" means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste into or upon any land or water so that such solid waste 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.

(21) "Engineer of record" means a professional engineer registered in the State of Florida in accordance with provisions of Chapter 471, F.S., who is appointed by the owner or operator of the solid waste management facility.

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

17-701.200(12) - 17-701.200(22)

(23) "Fill" means man-made deposits of earth or waste materials used to fill excavations, to increase the vertical or horizontal extent of land or solid waste disposal units, or to build embankments.

(24) "Final cover" means the materials used to cover the top and sides of a landfill when fill operations cease.

(25) "Garbage" means all kitchen and table food waste, and animal or vegetative waste that is attendant with or results from the storage, preparation, cooking, or handling of food materials.

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

(27) "Gas control system" means a system of wells, trenches, pipes, and other related structures that vents the gas produced in a solid waste disposal unit to the atmosphere.

(28) "Gas recovery facility" means a system of wells, trenches, pipes, and other related ancillary structures such as manholes, compressors, and monitoring installations that collect and transport the gas produced in a waste disposal unit to one or more gas processing points or flares. The flow of gas through such a system may be produced by naturally occurring gas pressure gradients or may be aided by an induced draft generated by mechanical means.

(29) "Generation" means the act or process of producing solid waste.

(30) "Geomembrane" means a low-permeability synthetic membrane used as an integral part of a system designed to limit the movement of liquid or gas in the system.

(31) "Geonet" means a type of a geogrid that allows planar flow of liquids and serves as a drainage system.

(32) "Geotextile" means a permeable textile used as a part of a system designed to act as a filter to prevent the flow of fine particles into drainage systems, to provide planar flow for drainage, to serve as a cushion to protect geomembranes, or to provide structural support.

(33) "Ground water" means water beneath the surface of the ground within a zone of saturation, whether or not it is flowing through known and definite channels.

(34) "Hazardous waste" means a solid waste regulated by the Department as a hazardous waste pursuant to Chapter 17-730, F.A.C.

(35) "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.

17-701.200(23) - 17-701.200(35)

(36) "Industrial solid waste" means solid waste generated by manufacturing or industrial processes that is not a hazardous waste. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products or byproducts; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing or 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.

(37) "Initial cover" means a 6-inch layer of compacted earth, used to cover an area of solid waste before placement of additional waste, intermediate cover, or final cover. The term also includes other material or thickness, approved by the Department, that minimizes vector breeding, animal attraction, and moisture infiltration, minimizes fire potential, prevents blowing litter, controls odors, and improves landfill appearance.

(38) "Intermediate cover" means a layer of compacted earth at least one foot in depth applied to a solid waste disposal unit. The term also includes other material or thickness, approved by the Department, that minimizes vectors, odors, and fire, and is consistent with the leachate control design of the landfill.

(39) "Landfill" means a solid waste disposal facility, which is an area of land or an excavation where wastes are or have been placed for disposal, for which a permit, other than a general permit, is required by Section 403.707, F.S. This term shall not include:

- (a) A land spreading site; or
- (b) A surface impoundment; or
- (c) An injection well defined under and subject to the provisions of Chapter 17-28, F.A.C.

(40) "Lateral expansion" means any horizontal increase in the dimensions of the waste boundary of an existing solid waste disposal unit.

(41) "Leachate" means liquid that has passed through or emerged from solid waste and may contain soluble, suspended or miscible materials.

(42) "Lift" means a completed horizontal series of cells.

(43) "Lined landfill" means a landfill constructed with a liner made of synthetic materials, low-permeability soils, or a combination of these materials, which has been approved by the Department, and which has met the Department's landfill design criteria at the time of permitting.

17-701.200(36) - 17-701.200(43)

(44) "Liner" means a continuous layer of low-permeability natural or synthetic materials, under the bottom and sides of a landfill, solid waste disposal unit, or leachate surface impoundment, which controls the downward or lateral escape of waste constituents, or leachate.

(45) "Liner system" means a system of leachate collection and liner layers comprised of natural or synthetic materials installed between the subgrade and the waste for the purpose of containing the waste and collecting and removing leachate.

(46) "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).

(47) "Lower explosive limit" means the lowest percent by volume of a mixture of explosive gases which will propagate a flame in air at a temperature of 25 degrees Celsius and atmospheric pressure.

(48) "Materials recovery" means any process by which one or more of the various components in solid waste is separated and concentrated for reuse.

(49) "Materials recovery facility" means a solid waste management facility that provides for the extraction from solid waste of recyclable materials, materials suitable for use as a fuel or soil amendment, or any combination of such materials.

(50) "Method detection limit" means the smallest concentration of an analyte of interest that can be measured and reported with 99 percent confidence that the concentration is greater than zero. The method detection limit shall be determined pursuant to procedures outlined in Appendix B of 40 CFR Part 136, which is hereby incorporated by reference.

(51) "Monitoring wells" means strategically located wells from which water samples are drawn for water quality analysis.

(52) "Normal farming operations" means the customary and generally accepted activities, practices, and procedures that farmers adopt, use, or engage in during the production and preparation for market of poultry, livestock, and associated farm products; and in the production, harvesting, or packaging of agricultural crops which include agronomic, horticultural, and silvicultural crops. Included is the management, collection, storage, composting, transportation, and utilization of organic agricultural waste, manure, and materials solely derived from agricultural crops.

17-701.200(44) - 17-701.200(52)

(53) "100-year 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.

(54) "On-site" means on the same or geographically contiguous property, which may be divided by public or private right-of-way.

(55) "Open burning" means the burning of any material under such conditions that the products of combustion are emitted directly into the atmosphere.

(56) "Operator" means any person, including the owner, who is principally engaged in, and is in charge of, the actual operation, supervision, and maintenance of a solid waste management facility.

(57) "Person" means any and all persons, natural or artificial, including any individual, firm, or association; any municipal or private corporation organized or existing under the laws of Florida or any other state; any county of this state; and any governmental agency of this state or the Federal Government.

(58) "Processing" means any technique designed to change the physical, chemical, or biological character or composition of any solid waste so as to render it safe for transport, amenable to recovery, storage or recycling; safe for disposal; or reduced in volume or concentration.

(59) "Professional engineer" means an engineer registered in the State of Florida in accordance with Chapter 471, F.S.

(60) "Professional geologist" means a geologist registered in the State of Florida in accordance with Chapter 492, F.S.

(61) "Recovered materials" means those materials which have known recycling potential, can be feasibly recycled, and have been diverted or removed from the solid waste stream for sale, use, or reuse, by separation, collection, or processing.

(62) "Recyclable material" means those materials which are capable of being recycled and which would otherwise be processed or disposed of as solid waste.

(63) "Recycling" means any process by which solid waste, or materials which would otherwise become solid waste, are collected, separated, or processed and reused or returned to use in the form of raw materials or products.

(64) "Resource recovery" means the process of recovering materials or energy from solid waste, excluding those materials or solid waste under control of the Nuclear Regulatory Commission.

17-701.200(53) - 17-701.200(64)

(65) "Sanitary nuisance" means a condition created by any person, or the keeping, maintaining, propagation, existence, or permitting of anything by a person by which the health or lives of individuals may be threatened or impaired, or by which disease may be caused or transmitted.

(66) "Shallow water supply well" means any potable water well which pumps water from an unconfined water table aquifer.

(67) "Shredding" means a process of reducing the particle size of solid waste through the use of grinding, shredding, milling, or rasping machines.

(68) "Site" means the area of land or water within the property boundaries of a solid waste management facility where one or more solid waste processing, resource recovery, recycling, storage, or disposal areas are located.

(69) "Solid waste" means garbage, refuse, yard trash, construction and demolition debris, white goods, special waste, ashes, sludge, or other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from domestic, industrial, commercial, mining, agricultural, or governmental operations. Materials not regulated as solid waste pursuant to this Chapter are: nuclear source or byproduct materials regulated under Chapter 404, F.S., or under the Federal Atomic Energy Act of 1954 as amended; suspended or dissolved materials in domestic sewage effluent or irrigation return flows, or other regulated point source discharges; regulated air emissions; and fluids or wastes associated with natural gas or crude oil exploration or production.

(70) "Solid waste disposal facility" means any solid waste management facility which is the final resting place for solid waste, including landfills and incineration facilities that produce ash from the process of incinerating municipal solid waste.

(71) "Solid waste disposal unit" means a discrete area of land used for the disposal of solid waste.

(72) "Solid waste management" means the process by which solid waste is collected, transported, stored, separated, processed, or disposed of in any other way, according to an orderly, purposeful, and planned program.

(73) "Solid waste management facility" means any solid waste disposal area, volume reduction plant, transfer station, or other facility, the purpose of which is resource recovery or the disposal, recycling, processing, or storage of solid waste. The term does not include facilities which use or ship recovered materials unless such facilities are managing solid waste.

17-701.200(65) 17-701.200(73)

(74) "Special wastes" means solid wastes that can require special handling and management, including but not limited to, white goods, waste tires, used oil, mattresses, furniture, lead-acid batteries, asbestos, and biological wastes.

(75) "Stabilized" means that biological and chemical decomposition of the wastes has ceased or diminished to a level so that such decomposition no longer poses a pollution, health, or safety hazard.

(76) "Ton" means a short ton, 2,000 pounds (.9078 metric tons).

(77) "Transfer station" means a site the primary purpose of which is to store or hold solid waste for transport to a processing or disposal facility. It does not include green boxes, compactor units, permanent dumpsters, and other containers from which such wastes are transported to a landfill or other solid waste management facility.

(78) "Unlined landfill" means a landfill which does not have a bottom liner system approved by the Department, or which has a bottom liner system which does not or did not meet the Department's landfill design criteria at the time of permitting. This term includes landfills underlain by only in-situ soils unless these soils have been tested and approved by the Department as part of a construction permit.

(79) "Used oil" has the meaning given it in Rule 17-710.200, F.A.C.

(80) "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 a facility's property boundary.

(81) "Vector" means a carrier organism that is capable of transmitting a pathogen from one organism to another.

(82) "Volume reduction plant" means an incinerator, pulverizer, compactor, shredding and baling plant, composting plant, or other plant which accepts and processes solid waste for recycling or disposal.

(83) "Waste tire" has the meaning given it in Rule 17-711.200, F.A.C.

(84) "Water quality standards and criteria" means, unless otherwise specified, those standards and criteria set forth in Chapters 17-3 and 17-302, F.A.C.

(85) "White goods" means inoperative and discarded refrigerators, ranges, washers, water heaters, freezers, and other similar domestic and commercial large appliances.

(86) "Working face" means that portion of a landfill where waste is deposited, spread, and compacted before placement of initial cover.

17-701.200(74) - 17-701.200(86)

(87) "Yard trash" means vegetative matter resulting from landscaping maintenance or land clearing operations and includes materials such as tree and shrub trimmings, grass clippings, palm fronds, trees and tree stumps.

(88) "Zone of discharge" has the meaning given it in Rule 17-3.021, F.A.C.

All other definitions found in Chapter 403, F.S., and Chapters 17-702 through 17-720, F.A.C., to the extent that they are consistent with the definitions of this chapter, are applicable to the terms used in this chapter.

Specific Authority: 403.061, 403.704, F.S.

Law Implemented: 403.021, 403.031, 403.061, 403.087, 403.701 through 403.717, F.S.

History: Transferred from 10D-12.02, 10-1-74; Revised

7-20-76; Amended 5-24-79, 6-13-84, 4-25-85, 7-1-85;

Previously numbered as 17-7.02; Amended 12-10-85; Formerly

17-7.020; Amended 8-2-89, 6-25-90; Formerly 17-701.020;

Amended 1-6-93.

17-701.210 Documents Incorporated by Reference.
Specific references to the documents listed below are made throughout this chapter. These documents are adopted as standards and are incorporated into this chapter by reference. The reference documents are available for inspection at the Department's district offices.

(1) EPA document EPA/530-SW-86-031, Construction Quality Assurance for Hazardous Waste Land Disposal Facilities; October, 1986.

(2) 40 CFR Part 61.154, Standard for Active Waste Disposal Sites; November 20, 1990.

(3) ASTM Method E96-80, Procedure BW, "Test Methods for Water Vapor Transmission of Materials," Sections 04.06, 08.03, and 15.09; February, 1981, editorial changes made standard in May, 1987.

(4) 40 CFR Part 136, Appendix B, Definition and Procedure for the Determination of the Method Detection Limit, revision 1.1; October 26, 1984.

(5) Method 9095, Paint Filter Test, found in EPA document EPA SW-846, Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods; Third Edition, September, 1986, as revised, December, 1987.

(6) 40 CFR Part 258, Appendix II; October, 1991.

Specific Authority: 403.061, 403.704, F.S.

Law Implemented: 403.061, 403.701 through 403.717, F.S.

History: New 1-6-93.

17-701.200(87) - 17-701.210(History)

17-701.220 General Applicability. This chapter applies to all solid waste and each solid waste management facility in this state, with the following exceptions:

(1) This chapter was substantially amended on January 6, 1993, and a number of provisions were deleted or modified at that time. Except as otherwise specifically provided herein, facilities which were permitted or received a site certification prior to January 6, 1993, or for which a complete application was submitted and deemed complete by the Department prior to January 6, 1993, remain subject to the provisions which were in effect prior to January 6, 1993, and which were applicable to them.

(2) This chapter applies to all solid waste and each solid waste management facility in this state, with the following exceptions.

(a) Surface impoundments not addressed in Rule 17-701.400(6), F.A.C.;

(b) Injection wells defined under and subject to the provisions of Chapter 17-28, F.A.C.; and

(c) Recovered materials, if:

1. A majority of the recovered materials at a facility are demonstrated to be sold, used, or reused within one year;

2. The recovered materials or the products or byproducts of operations that process recovered materials are not discharged, deposited, injected, dumped, spilled, leaked, or placed into or upon any land or water so that such products or byproducts or any constituent thereof may enter other lands or be emitted into the air or discharged into any waters, including ground water, or otherwise enter the environment or pose a threat to public health and safety; and

3. The recovered materials are not hazardous wastes and have not been recovered from hazardous wastes.

(3) Phosphogypsum is considered solid waste. However, phosphogypsum stack systems are not considered landfills, and are not subject to the specific landfill construction, operation, or closure requirements of this chapter.

Specific Authority: 403.061, 403.704, F.S.

Law Implemented: 403.061, 403.701 through 403.717, F.S.

History: New 1-6-93.

17-701.300 Prohibitions.

(1) General prohibition.

(a) No person shall store, process, or dispose of solid waste except at a permitted solid waste management facility or a facility exempt from permitting under this chapter.

17-701.220 - 17-701.300(1)(a)

(b) No person shall store or dispose of solid waste in a manner or location that causes air quality standards to be violated or water quality standards or criteria of receiving waters to be violated.

(2) Disposal. Unless authorized by a Department permit or site certification in effect on January 6, 1993, no solid waste shall be stored or disposed of by being placed:

(a) In an area where geological formations or other subsurface features will not provide support for the solid waste;

(b) In any area where the absence of geological formations or subsurface features would allow for the unimpeded discharge of waste or leachate to ground or surface water. A person may dispose of solid waste in such an area upon demonstration to the Department that permanent leachate control methods will result in compliance with water quality standards under Chapters 17-302 and 17-520, F.A.C.;

(c) Within 500 feet of an existing or approved shallow water supply well unless disposal takes place at a facility for which a complete permit application was filed or which was originally permitted before the shallow water supply well was in existence;

(d) In a dewatered pit unless the pit is lined and permanent leachate containment and special design techniques are used to ensure the integrity of the liner;

(e) In an area subject to frequent and periodic flooding unless flood protection measures are in place;

(f) In any natural or artificial body of water including ground water;

(g) Within 200 feet of any natural or artificial body of water, including wetlands within the jurisdiction of the Department, except bodies of water contained completely within the property boundaries of the disposal site, which do not discharge from the site to surface waters. A person may dispose of solid waste within the 200 foot setback area upon demonstration to the Department that permanent leachate control methods will result in compliance with water quality standards under Chapters 17-302 and 17-520, F.A.C.

Stormwater control methods shall meet stormwater requirements of Chapter 17-25, F.A.C. However, nothing contained herein shall prohibit the Department from imposing conditions necessary to assure that solid waste disposed of within the 200 foot setback area will not cause pollution from the site in contravention of Department rules.

(h) On the right of way of any public highway, road, or alley;

17-701.300(1)(b) - 17-701.300(2)(h)

(3) Burning. Open burning of solid waste is prohibited except in accordance with Rule 17-701.520(2), F.A.C. Controlled burning of solid waste is prohibited except in a permitted incinerator, or in a facility in which the burning of solid waste is authorized by a site certification order issued under Chapter 403, Part II, F.S.; clean vegetative and wood wastes may be burned in an air curtain incinerator in accordance with Rule 17-2.500(1)(e), F.A.C. — See also p. 91

(4) Hazardous waste. No hazardous waste shall be disposed of in a solid waste management facility unless such facility is permitted pursuant to Chapter 17-730, F.A.C.

(5) Biohazardous waste. Biohazardous waste shall be properly incinerated so that little or no organic material remains in the ash residue, or shall be processed by a method approved by the Department pursuant to Chapter 17-712, F.A.C. No untreated biohazardous waste shall be knowingly deposited in any landfill.

(6) Class I surface waters. The Department shall not issue a construction permit for a landfill within 3,000 feet of Class I surface waters.

(7) Special wastes for landfills. No person who knows or who should know of the nature of such solid waste shall dispose of the following wastes in any landfill:

- (a) Lead-acid batteries;
- (b) Used oil, except as provided in Chapter 17-710, F.A.C.;
- (c) Yard trash, except in unlined landfills classified by Department rule;
- (d) White goods; and
- (e) Whole waste tires, except as provided in Chapter 17-711, F.A.C.

(8) Special wastes for waste-to-energy facilities. No person who knows or who should know of the nature of such solid waste shall dispose of lead-acid batteries in any waste-to-energy facility

(9) Liquids restrictions.

(a) Noncontainerized liquid waste shall not be placed in solid waste disposal units unless:

- 1. The waste is household waste other than septic waste;
- 2. The waste is leachate or gas condensate derived from the solid waste disposal unit and the solid waste disposal unit is designed in accordance with Rule 17-701.400, F.A.C.; or

3. Such disposal is authorized by the Department on a case-by-case basis, based upon the nature and quantity of the liquid waste, the landfill design, the landfill operational practices, and the potential for creating leachate in excess of the landfill's capacity to handle.

17-701.300(3) - 17-701.300(9)(a)3.

(b) Containers holding liquid waste shall not be placed in a solid waste disposal 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) Containers or tanks twenty gallons or larger in capacity shall either have one end removed or cut open, or have a series of punctures around the bottom to ensure the container is empty and free of residue. The empty container or tank shall be compacted to its smallest practical volume for disposal.

Specific Authority: 403.061, 403.704, F.S.

Law Implemented: 403.021, 403.061, 403.087, 403.702, 403.704, 403.705, 403.707, 403.708, F.S.

History: Transferred from 10D-12.06, 10D-12.07, 10-1-74; Amended 5-24-79, 5-27-82; Previously Numbered as 17-7.04; Amended 12-10-85; Formerly 17-7.040; Amended 6-25-90; Formerly 17-701.040; Amended 1-6-93.

17-701.310 Approval of Alternate Procedures and Requirements.

[1] Applicability. Any person subject to the provisions of this chapter or Chapters 17-702 through 17-720, F.A.C., may request in writing a determination by the Secretary that a requirement shall not apply, and shall request approval of alternate procedures or requirements.

[2] Criteria. The request shall set forth at a minimum the following information:

(a) The specific facility for which an exception is sought;

(b) The specific provisions from which an exception is sought;

(c) The basis for the exception;

(d) The alternate procedure or requirement for which approval is sought and a demonstration that the alternate procedure or requirement provides an equal degree of protection for the public and the environment; and

(e) A demonstration of the effectiveness of the proposed alternate procedure.

[3] Department order. The Secretary shall specify by order each alternate procedure or requirement approved in accordance with this section or shall issue an order denying the request for such approval. The Department's order shall be agency action, reviewable in accordance with Section 120.57, F.S.

17-701.300(9)(b) - 17-701.310(3)

(4) Alternate sampling procedures. Approval of alternative or new field and laboratory sampling and analysis procedures shall be requested in accordance with Rules 17-160.430, 17-160.520 and 17-160.530, F.A.C.

(5) Variances. Requests for variances from specific statutory requirements shall be made pursuant to Section 403.201, F.S., and Rule 17-103.100, F.A.C.

(6) Requests for alternate procedures shall be accompanied by a fee of \$2000 in accordance with Rule 17-4.050(4)(m)4., F.A.C. Requests must be submitted to the Director of the Division of Waste Management, 2600 Blair Stone Road, Twin Tower Office Building, Tallahassee, Florida 32399-2400.

Specific Authority: 403.704, F.S.

Law Implemented: 403.704, 403.707, F.S.

History: New 7-1-85; Amended 12-10-85; Formerly 17-7.078; Formerly 17-701.078; Amended 1-6-93.

17-701.320 Solid Waste Management Facility Permit Requirements, General.

(1) Permit requirements. No solid waste management facility shall be constructed, operated, maintained, modified, or closed without a permit issued by the Department. See also 17-4.030, 403.101(1)5.

(2) Exemptions. No permit under this chapter shall be required for the following activities or facilities provided that no sanitary nuisance or any condition adversely affecting the environment or public health is created, and provided that the activity does not violate other state or local laws, ordinances, rules, regulations, or orders. For purposes of this subsection, disposal shall be deemed to include storage prior to disposal or processing.

(a) Disposal by persons of solid waste resulting from their own activities on their own property, provided such waste is either from their residential property or is rocks, soils, trees, tree remains, and other vegetative matter which normally results from land development operations.

(b) Disposal by persons of solid waste resulting from their own activities on their property, provided that the environmental effects of such disposal on ground water and surface waters are:

1. Addressed or authorized by a site certification issued under Chapter 403, Part II, F.S., Electrical Power Plant Siting;

2. Addressed or authorized by a permit issued by the Department, including solid waste management permits or other environmental permits modified to include conditions for proper disposal; or

17-701.310(4) - 17-701.320(2)(b)2.

3. Addressed or authorized by, or specifically exempted from the requirement to obtain, a ground water monitoring plan approved by the Department.

(c) On-site disposal of construction and demolition debris, provided that disposal conforms to Rule 17-701.730(3), F.A.C.

(d) Clean debris which is used as fill material.

(e) Disposal of solid waste resulting from normal farming operations.

(f) Storage of solid waste in containers on property which is owned, rented, or leased by the persons who generated the waste from their own activities which occurred on their property, if the solid waste in such containers is collected at least once a week.

(g) Disposal by persons of solid waste resulting from their own activities on their own property, if that waste disposal occurred before October 1, 1988.

(3) Responsible applicant.

In addition to the provisions of Rule 17-4.070(5), F.A.C., When determining whether the applicant has provided reasonable assurances that Department standards will be met, the Department shall consider repeated violations of applicable statutes, rules, orders, or permit conditions caused by a permit applicant after October, 1988, relating to the operation of any solid waste management facility in this state for which the applicant is deemed to be responsible. For purposes of this subsection, the following words have the following meanings:

(a) "Applicant" means the owner or operator of the solid waste management facility in this state, and includes a business entity, a parent of a subsidiary corporation, a partner, a corporate officer or director, or a stockholder holding more than 50 percent of the corporate stock.

(b) "Responsible" means that an applicant owned or operated a solid waste management facility in this state, including transportation equipment or mobile processing equipment used by or on behalf of the applicant, which was subject to a state or federal notice of violation, judicial action, or criminal prosecution for activities that constitute violations of Chapter 403, F.S., or the rules promulgated thereunder, and could have prevented the violation through reasonable compliance with Department rules.

(4) Modification of an approved permit. Nothing in this rule shall be construed to limit or prohibit modifications of a permit under the provisions of Rule 17-4.080, F.A.C.

(5) Permit application.

17-701.320(2)(b)3. - 17-701.320(5)

(a) Applications for a solid waste management facility shall be submitted on appropriate Department forms listed in Rule 17-701.900, F.A.C., to the Department district office with jurisdiction where the facility is located. A minimum of six copies each of the application, engineering plans and reports, and all supporting information for the proposed construction, substantial modification, operation or closure of a facility shall be provided to the Department.

(b) Information in every application shall be of sufficient detail to show how the facility will be constructed, operated, and closed, and how it will be monitored and maintained after closure, in order to comply with the requirements of this chapter.

multiple fees
(c) Combination facilities. An application for a permit to construct or operate a solid waste management facility having multiple solid waste management components which, if standing alone, would require solid waste management facility permits, shall include all information required to be submitted had each component been proposed as a separate facility, independent of the other components. Such information may be combined or otherwise presented so as to avoid duplicative or repetitive submittals. Additionally, such applications shall be accompanied by such fees as would be required for each facility component; however, the total permit fees for a facility shall not exceed \$25,000, exclusive of modifications and renewals.

E certification
(6) Engineer of record and professional certification. All engineering plans, reports, and information supporting the application shall be compiled by the engineer of record who shall be responsible for assurance that all technical components have been prepared under the direction and supervision and signed and sealed by the professional registered in Florida in each contributing technical discipline. The engineer of record's signature and seal of the application shall assure that all appropriate technical professional disciplines have been employed in development of the application. The application shall provide that the engineer of record or another qualified professional shall make periodic inspections during construction of the facility to ensure that design integrity is maintained.

(7) Application content and format. Applications for permits to construct, operate, modify, or close a solid waste management facility shall include in the following sequence:

- (a) A letter of application transmittal;
- (b) A completed application form dated and signed by the applicant;

17-701.320(5)(a) - 17-701.320(7)(b)

(c) The permit fee specified in Rule 17-4.050, F.A.C., in check or money order, payable to the Department.

(d) An engineering report addressing the requirements of this rule which shall:

1. Contain a cover sheet stating the project title, location, applicant's name, and the engineer's name, address, signature, date of signature and seal;
2. Have the text printed on 8 1/2 inch by 11 inch consecutively numbered pages;
3. Contain a table of contents or index describing the body of the report and the appendices; and
4. Include the body of the report and all appendices.

(e) Appendices submitted as part of an engineering report to support a permit application shall contain, where required under applicable sections of this rule:

1. An operation plan appropriate for the type of facility;
2. A contingency plan appropriate for the type of facility to cover operations interruptions and emergencies such as fires, explosions, or natural disasters;
3. Illustrative charts and graphs;
4. Records or logs of tests, soil borings, hydrogeological information, geochemical surveys, and water quality analyses; and
5. Engineering calculations, including literature citations.

(f) Plans or drawings for all solid waste management facilities shall:

1. Use sheets 22 inches by 34 inches or 24 inches by 36 inches, and include title blocks;
2. Have a cover sheet that includes the project title, applicant's name, sheet index, legend of symbols, and the engineer's name, address, signature, date of signature and seal;
3. Include a regional map or plan showing the project location;
4. Include a current vicinity map, or aerial photograph taken within one year preceding the application;
5. Have a site plan containing the location of all property boundaries certified by a registered Florida land surveyor; and
6. Clearly show all necessary details and be numbered, titled, and referenced to the narrative report. Drawings shall contain a north arrow and horizontal and vertical scales, and shall specify drafting or origination dates. All elevations shall be referenced to National Geodetic Vertical Datum.

17-701.320(7)(c) - 17-701.320(7)(f) 6.

(g) Proof of property ownership, or a copy of any lease agreement, transfer of property agreement with right of entry for long-term care, interlocal government agreement, or any other agreement between the facility operator and property owner which may affect the facility; and

(h) For facilities owned or operated by a county, a description of the existing or proposed recycling facilities or activities, if any, at the site and a description of whether, and the extent to which, these recycling facilities or activities will contribute to the county's achievement of the recycling goals contained in Section 403.706, F.S.

(i) For purposes of the evaluation required in subsection (3) of this section, a history and description of any enforcement actions described in subsection (3) of this section relating to solid waste management facilities in this state.

(8) Notice of application.

(a) An applicant for a permit to construct or substantially modify a solid waste management facility shall publish and provide proof of publication to the Department of a Notice of Application in a newspaper of general circulation in the area where the facility will be located, in accordance with Rule 17-103.150, F.A.C.

(b) For all landfills, the Department shall mail a notice of receipt of permit application to the Chair of the Board of County Commissioners, the highest ranking elected official of the municipality, and each State Senator and Representative serving the jurisdiction in which the project is located. After the Department completes the permit review, a copy of the notice of intent to issue or deny the permit will also be sent to these same officials.

(9) Permits for construction, modification, operation, and closure. Complete permit applications for construction or operation of a solid waste management facility, renewal of an operation permit for an existing facility, modification of an existing facility, or closure of a facility shall be evaluated by the respective Department district office in accordance with Chapters 17-4 and 17-701, F.A.C. The Department shall:

(a) Issue a construction permit, or a construction/operation permit for a solid waste management facility, or for a substantial modification of an existing solid waste management facility. After all specified construction has been completed and before acceptance of any solid waste, the owner or operator shall submit to the Department a certification of construction completion, Form 17-701.900(2), signed and sealed by a professional engineer,

17-701.320(7)(g) - 17-701.320(9)(a)

and any modifications of the record drawings, and shall arrange for Department representatives to inspect the facility in the company of the permittee, the engineer, and the proposed facility operator. The facility shall not be operated until the certification has been submitted and approved, all documentation required as a condition of the permit has been submitted, and a facility inspection by Department personnel has been conducted; or

(b) Issue an operation permit for a new facility that has been satisfactorily constructed, or to an existing facility which is being operated in accordance with this chapter at the time for permit renewal; or

(c) Issue a closure permit for closing and long-term care of a landfill which complies with the requirements of Rules 17-701.600 - .620, F.A.C.; or

(d) Deny the issuance of a permit if reasonable assurances are not provided that the requirements of Chapters 17-4 and 17-701, F.A.C., will be satisfied.

(10) Identification number. The Department shall assign an identification number to each solid waste management facility that receives a permit. The number shall be unique to that facility, and shall remain assigned to that facility at all times. The identification number shall be used on all correspondence and records related to that facility.

(11) Local zoning. The Department does not evaluate compliance with local zoning or land use ordinances when determining whether to issue or deny any permit under this chapter. Issuance of a permit does not relieve an applicant from compliance with local zoning or land use ordinances, or with any other laws, rules, or ordinances.

(12) Airport safety.

(a) Applicability. This subsection applies to those facilities constructed after January 6, 1993, as well as lateral expansions of facilities which were constructed prior to January 6, 1993. *See also 17-701.320(9)(a)*

(b) Solid waste management facilities where waste is stored, disposed, or processed outdoors, shall not be located within 10,000 feet of any licensed and operating airport runway used by turbine powered aircraft, or within 5,000 feet of any licensed and operating airport runway used only by piston engine aircraft, unless the applicant demonstrates that the facility is designed and will be operated so that it does not pose a bird hazard to aircraft.

(c) Applicants proposing to site new landfills and lateral expansions of existing landfills within a five-mile radius of any licensed and operating airport runway used by turbine powered or piston engine aircraft shall notify the affected airport, the Federal Aviation Administration, and *See also 17-701.320(9)(b)*

17-701.320(9)(a)(cont'd.) - 17-701.320(12)(c)

the Florida Department of Transportation when the application is filed with the Department, and shall provide evidence of such notification to the Department.

(13) Other facility permits. In addition to the exemptions in subsection (2) of this section, the following solid waste management facilities which are constructed and operated under an appropriate and currently valid permit are not required to obtain a separate solid waste permit pursuant to this chapter:

(a) Incinerators which are constructed and operated under a permit issued pursuant to Chapters 17-296 or 17-256, F.A.C.; however, if the facility is also storing or disposing of solid waste on the site, and such storage or disposal is not addressed in the permit, a separate solid waste permit is required;

(b) Incinerators which are constructed and operated under a site certification pursuant to Chapter 403, Part II, F.S.;

(c) Solid waste management facilities, such as composting facilities, waste tire processing facilities, used oil recycling facilities, and biohazardous waste treatment or storage facilities, which are required to obtain permits under Rules 17-702 through 17-729, F.A.C. Specific Authority: 403.061, 403.704, F.S. Law Implemented: 403.702, 403.704, 403.707, F.S. History: New 1-6-93.

17-701.330 Landfill Permit Requirements.

(1) Applicability.

(a) Except as otherwise specifically provided herein, this chapter shall apply to all solid waste disposal units constructed or operated under a landfill permit issued after January 6, 1993, including renewals of existing permits.

(b) All holders of landfill construction or operation permits issued prior to January 6, 1993, which contain conditions not in conformance with this chapter shall apply for modification of the permit to conform to this chapter to the District Office of the Department which issued the permit. The submission shall occur at the time of application for renewal of an existing permit, or before July 6, 1993, whichever is later. For purposes of this paragraph, a permit issued prior to January 6, 1993, is deemed to include a completed permit application received by the Department prior to January 6, 1993.

(c) Rules 17-701.400 - .420, F.A.C., shall not apply to any solid waste disposal unit for which construction is completed prior to the later of the dates specified in

17-701.320(12)(c)(cont'd.) - 17-701.330(1)(c)

paragraph (b) of this subsection. Such solid waste disposal unit may be operated until filled to its permitted or modified design dimensions which, if such unit is lined, may include any future vertical expansion over the liner in accordance with Rule 17-701.430, F.A.C.

(d) Facilities operating pursuant to a Consent Order with the Department in effect on January 6, 1993, shall continue to operate in accordance with the order until the order expires by its own terms, provided the landfill is in compliance with the terms and conditions of the order. If the facility owner or operator fails to comply with any substantive term or condition of the order, the facility covered by the order must comply with the operational, closure and long-term care requirements of this chapter.

Consent Orders

(2) Term of permit. The time period for permits shall be no longer than five years from the date of issuance by the Department. Permits may be issued for a shorter period for specific circumstances.

(3) Permit renewals.

(a) Construction/operation permits shall be renewed at least every five years. Applicants for permit renewal shall demonstrate how they will comply with any applicable new or revised laws or rules relating to construction, operation, or closure of landfills. Closure plans shall be updated at the time of permit renewal to reflect changes in closure design, long-term care requirements, and financial responsibility documentation.

(b) Facility information that was submitted to the Department to support the expiring permit, and which is still valid, does not need to be re-submitted for permit renewal. The permit renewal application shall list and reaffirm that the information is still valid.

(4) Permit applications. Permit applications for landfills shall meet the requirements of Rule 17-701.320, F.A.C., and shall also include the following specific requirements:

(a) A vicinity map or aerial photograph not more than one year old which shows land use and local zoning within one mile of the landfill and is of sufficient scale to show all homes or other structures, water bodies, roads, and other significant features of the vicinity. All significant features shall be labeled.

(b) A vicinity map or aerial photograph not more than one year old which shows all airports that are located within five miles of the proposed landfill.

(c) A plot plan of the site showing dimensions, locations of proposed and existing water quality monitoring wells or points, locations of soil borings, proposed plan of trenching or disposal areas, original elevations, proposed

17-701.330(1)(c)(cont'd.) - 17-701.330(4)(c)

final contours, any previously filled waste disposal areas, and fencing. Cross sections shall be included on the plot plan or on separate sheets showing both the original and proposed fill elevations. The scale of the plot plan shall not be greater than 200 feet to the inch.

(d) Topographic maps at a scale of not greater than 200 feet to the inch with 5-foot contour intervals. These maps shall show the proposed fill area, any borrow area, access roads, grades required for proper drainage and cross sections of lifts, special drainage devices if necessary, fencing, and equipment facilities.

(e) A report on the:

1. Current and projected population and area to be served by the proposed site;
2. Anticipated type, annual quantity, and source of solid waste, expressed in tons;
3. Anticipated life of the facility; and
4. Source and type of cover material.

(f) The Hydrogeological investigation and ground water monitoring plan required by Rule 17-701.410 and .510, F.A.C.

(g) The Geotechnical investigation required by Rule 17-701.420, F.A.C.

(h) Evidence of an approved laboratory to do water quality monitoring in accordance with Rule 17-160, F.A.C.

(i) A statement of how the applicant will demonstrate financial responsibility for the closing and long-term care of the landfill.

(5) Modification of landfill permit. Permits shall be modified in accordance with the requirements of Rule 17-4.080, F.A.C. A modification which is reasonably expected to lead to substantially different environmental impacts which require a detailed review by the Department is considered a substantial modification.

(6) On-site records. A copy of the Department approved permit, engineering drawings, operational plan, and supporting information shall be kept at the facility at all times for reference and inspections.

Specific Authority: 403.061, 403.704, F.S.

Law Implemented: 403.702, 403.704, 403.707, F.S.

History: New 1-6-93.

17-701.340 General Criteria For Landfills.

(1) Performance standards. A landfill shall be designed, constructed, operated, maintained, closed, and monitored throughout its design period to control the movement of waste and waste constituents into the environment so that ground water and surface water quality standards and criteria of Chapters 17-3 and 17-302, F.A.C., will not be violated beyond the zone of discharge specified for the landfill.

17-701.330(4)(c)(cont'd.) - 17-701.340(1)

(2) Minimum ground water criteria. For those landfills or solid waste disposal units which are constructed after January 6, 1993, and which are constructed with at least a double or composite liner, the minimum ground water criteria specified in Rule 17-3.402, F.A.C., shall apply only outside of the footprint of the solid waste disposal unit, or if the unit is surrounded by a perimeter road, outside the perimeter road, notwithstanding the provisions of Rule 17-3.404, F.A.C.

(3) Classification of landfills. Landfills or solid waste disposal units are classified according to the amount or types of waste received.

(a) Class I landfills are those which receive an average of 20 tons or more of solid waste per day.

(b) Class II landfills are those which receive an average of less than 20 tons of solid waste per day.

(c) Class I and Class II landfills receive general, non-hazardous household, commercial, industrial, and agricultural wastes, subject to the restrictions of Rules 17-701.300 and 17-701.520, F.A.C.

(d) Class III landfills are those which receive only yard trash, construction and demolition debris, shredded waste tires, asbestos, carpet, cardboard, paper, glass, plastic, furniture other than appliances, or other materials approved by the Department which are not expected to produce leachate which poses a threat to public health or the environment. The Department may exempt Class III landfills from some or all of the requirements for liners, leachate controls, and water quality monitoring in Rules 17-701.400(3) and (4), and 17-701.510, F.A.C., if it determines based upon the types of waste received, methods for controlling types of waste disposed of, and the results of the hydrogeological and geotechnical investigations required in Rules 17-701.410 and 17-701.420, F.A.C., that no significant threat to the environment will result from such exemption. Yard trash composting facilities shall be operated in accordance with Chapter 17-709, F.A.C. Owners or operators of Class III landfills which are operating on January 6, 1993, shall apply for modification of their permits to comply with this paragraph no later than January 6, 1994.

(4) Location requirements.

(a) The site shall provide structural support for the facility including total wastes to be disposed of and structures to be built on the site.

(b) A landfill or solid waste disposal unit shall not be located in the 100-year floodplain where it will restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain unless compensating storage is provided, or result in a washout of solid waste.

17-701.340(2) - 17-701.340(4)(b)

(c) The minimum horizontal separation between waste deposits in a landfill and the landfill property boundary shall be 100 feet, measured from the toe of the proposed final cover slope.

(d) Landfills shall be screened from public view where such screening can practically be provided.

(5) Zone of discharge. A landfill's zone of discharge shall be determined pursuant to Chapter 17-522, F.A.C. For all solid waste disposal units constructed after January 6, 1993, the zone of discharge shall not exceed 100 feet from the edge of those solid waste disposal units permitted to be constructed.

Specific Authority: 403.061, 403.704, F.S.

Law Implemented: 403.702, 403.704, 403.707, F.S.

History: New 1-6-93.

17-701.400 Landfill Construction Requirements.

(1) Minimum design standards. The requirements of this rule are the minimum standards for constructing a landfill. Nothing in this rule shall be construed to prevent the Department from imposing more stringent standards as necessary to protect the environment and the public health and safety due to site specific conditions and types of wastes to be disposed of in the landfill or solid waste disposal unit. An applicant whose landfill design meets the design standards of this rule will be presumed to provide reasonable assurance that the performance standards of Rule 17-701.340(1), F.A.C., will be met.

(2) Planned construction and closure. All landfills shall be designed so that solid waste disposal units will be constructed and subsequently closed at planned intervals throughout the design period of the landfill.

(3) Landfill liner requirements. Landfills shall be constructed with composite or double liners, and a leachate collection and removal system.

(a) Liners shall be:

1. Constructed of materials that have appropriate physical, chemical, and mechanical properties to prevent failure due to physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation, and other applied stresses and hydraulic pressures which are anticipated during the operational and closure period of the solid waste disposal unit. The supplier of materials for the liner components shall provide test information accepted by the engineer of record, that supports the capabilities of the materials to meet these needs;

17-701.340(4)(c) - 17-701.400(3)(a)1.

2. Installed upon a base and in a geologic setting capable of providing structural support to prevent overstressing of the liner due to settlements and applied stresses;

3. Constructed so that the bottom of the liner system is not subject to fluctuations of the ground water so as to adversely impact the integrity of the liner system.

4. Designed to resist hydrostatic uplift if the liner is located below the seasonal high ground water table; and

5. Installed to cover all surrounding earth which could come into contact with the waste or leachate.

(b) Composite liners.

1. The upper component of the composite liner shall be a 60-mil or thicker geomembrane liner with a maximum water vapor transmission rate of 0.24 grams per square meter per day ($\text{g}/(\text{m}^2 \times \text{day})$) as determined by ASTM Method E96-80, procedure BW, "Test Methods for Water Vapor Transmission of Materials," Sections 04.06, 08.03, and 15.09. A primary leachate collection and removal system and a drainage layer shall be installed above the geomembrane liner. Except in sumps and leachate collection trenches, the system shall be designed to limit leachate head above the liner during routine landfill operation after placement of initial cover, as specified in Table A below, depending upon the thickness and hydraulic conductivity of the lower component of the composite liner. Leachate head calculations shall consider leachate recirculation if the leachate is recirculated.

2. The lower component of the composite liner shall be constructed in six-inch lifts. The thickness of the lower component may be varied in relation to the hydraulic conductivity of the lower component and the design leachate head above the liner, in accordance with Table A.

TABLE A:
Minimum Thickness of Lower Component of
Composite Liner (in feet)

Maximum Design Hydraulic Head (in inches)	Maximum Hydraulic Conductivity (cm/sec)		
	1×10^{-7}	5×10^{-8}	1×10^{-8}
1	2	1	1
6	2.5	1.5	1
12	3	2	1

17-701.400(3)(a)2. 17-701.400(3)(b)2.

(c) Double liners.

1. Double liner systems shall consist of upper and lower 60-mil minimum thickness geomembranes with a maximum water vapor transmission rate of $0.24 \text{ g}/(\text{m}^2 \times \text{day})$; a primary leachate collection and removal system lying above the upper geomembrane designed to limit the leachate head to one foot above the liner during routine landfill operations after placement of initial cover, except in sumps and leachate collection trenches; and a leak detection and secondary leachate collection system between the upper and lower liners. The lower geomembrane shall be placed directly on a sub-base which is a minimum six inches thick and has a saturated hydraulic conductivity of less than or equal to $1 \times 10^{-5} \text{ cm/sec}$.

2. The leak detection and secondary leachate collection system shall have a minimum hydraulic conductivity of one cm/sec, shall be designed to limit the maximum hydraulic head on the lower liner to one inch, and shall not allow leachate head to exceed the thickness of the drainage layer. The hydraulic conductivity of the leak detection and secondary collection system material shall be derived from transmissivity and thickness measurements.

(d) Standards for geomembranes.

1. Geomembranes shall have factory and field seams whose shear strengths during testing are at least 90 percent of the specified minimum yield strength for that lining material, and the failure shall occur in the lining material outside the seam area. All field seams must also be visually inspected and pressure or vacuum tested for seam continuity using suitable non-destructive techniques.

2. Geomembranes shall be protected from physical damage by placing a minimum 24-inch-thick protective layer above the upper liner. All materials in direct contact with the liner shall be free of sharp materials or any materials larger than one-half inch. The upper 12 inches of the protective layer shall be composed of soil, tire chips four square inches or smaller with no protruding wires, or other materials approved by the Department which are permeable, non-reactive, stable, and which offer protection for the liner from punctures.

3. The first layer of waste placed on the protective layer above the liner and leachate collection system shall be a minimum of four feet in compacted thickness, and consist of selected wastes containing no large, rigid objects that may damage the liner or leachate collection system. Materials that could damage the liner shall be removed from this layer.

17-701.400(3)(c) - 17-701.400(3)(d)3.

(e) The following specifications shall be provided for geosynthetic components:

1. Definition and qualifications of the designer, manufacturer, installer, geosynthetic quality assurance consultant, geosynthetic quality assurance laboratory, and quality assurance program;

2. Material specifications for geomembranes, geotextiles, geogrids, and geonets, including general requirements, specified geomembrane properties, and labelling;

3. Manufacturing and fabrication specifications including:

a. Geomembrane manufacturing, including raw material and roll quality control;

b. Geomembrane fabrication, including requirements of personnel, seaming equipment and products, seam preparation, weather conditions for factory seaming, overlapping and temporary bonding, trial seams, and nondestructive seam continuity testing;

c. Destructive seam strength testing including location and frequency, sampling procedure, size of samples, testing at the fabrication factory, laboratory testing, fabricator's laboratory testing, and procedures for destructive test failure; and

d. Repairs.

4. Geomembrane installation specifications including

a. Earthwork;

b. Conformance testing;

c. Geomembrane placement, which shall address layout drawings, panel identification, and field panel placement;

d. Field seaming, which shall address seam layout, requirements of personnel, overlapping and temporary bonding, seam preparation, seaming equipment and products, weather conditions for seaming, trial seams, general seaming procedures, nondestructive seam continuity testing, destructive testing, and defects and repairs including identification, evaluation, and repair procedures;

e. Materials in contact with the geomembrane, including granular materials, concrete, and sumps and appurtenances; and

f. Lining system acceptance.

5. Geotextile and geogrid specifications including handling and placement, conformance testing, seams and overlaps, repair, and placement of soil materials.

6. Geonet specifications including handling and placement, conformance testing, stacking and joining, repair, and placement of soil materials.

(f) Standards for soil components.

17-701.400(3)(e) - 17-701.400(3)(f)

1. Soil components of liner systems shall be constructed to preclude, to the greatest extent practicable, lenses, cracks, channels, root holes, pipes, or other structural inconsistencies that can increase the saturated hydraulic conductivity of the soil component. The design shall illustrate and describe those instances in which overexcavation of permeable areas and backfilling may be necessary to seal the permeable area. The soil component shall be placed and compacted in layers to achieve the design performance.

2. The permeability of soil liner components shall not be increased above the values specified for the component, as a result of contact with leachate from the solid waste disposal unit. Compatibility of the soil component and leachate shall be demonstrated by testing the soil component with actual or simulated leachate in accordance with EPA Test Method 9100 or an equivalent test method.

3. The soil component of the liner system may consist of in-situ soils, provided they meet the specifications for soil liners. Testing of in-situ soil shall be performed in accordance with the site specific Construction Quality Assurance Plan in accordance with Rule 17-701.400(7), F.A.C.

4. Specifications for the soil component of the liner system shall be provided to and approved by the Department, and shall contain at a minimum:

- a. Allowable range of particle size distribution and Atterberg limits, to include shrinkage limit;
- b. Placement moisture criteria and dry density criteria;
- c. Maximum laboratory-determined saturated hydraulic conductivity, using simulated leachate as the saturating and testing liquid;
- d. Minimum thickness of the soil liner;
- e. Lift thickness;
- f. Surface preparation (scarification) for tying lifts together; and
- g. Type and percentage of clay mineral within the soil component.

5. The soil liner shall be placed using construction equipment and procedures that achieve the required saturated hydraulic conductivity and thickness. A field test section shall be constructed using the proposed construction equipment and tested to document that the desired saturated hydraulic conductivity and thickness is achieved in the field. Test results shall be submitted to and approved by the Department along with the completion of construction documents.

(4) Leachate collection and removal system. Landfills shall have a leachate collection and removal system that is designed, constructed, maintained, and operated to collect leachate and convey it to collection points for removal.

17-701.400(3)(f)1. - 17-701.400(4)

(a) The primary and secondary leachate collection and removal systems shall:

1. Be constructed of materials that are chemically resistant to the waste disposed of in the landfill and the leachate expected to be generated;
2. Have sufficient mechanical properties to prevent collapse under pressures exerted by overlying wastes, cover materials, and by any equipment used at the landfill;
3. Have granular material or synthetic geotextile filter overlying or surrounding the leachate collection and removal system to prevent clogging of the collection system by infiltration of fine particles from the waste; and
4. Have a method to test that the pipes in the system are not clogged, and a method for cleaning the pipes in the system if they become clogged. If any part of the system cannot be tested for clogging, the design shall assure that leachate can be rerouted from that part to a leachate sump in the event of collapse.

(b) The primary leachate collection and removal system shall have a granular drainage layer above the top geomembrane liner, at least 12 inches thick, with a hydraulic conductivity of not less than 1×10^{-3} cm/sec, overlain with an additional 12 inches of soil or other material approved by the Department to provide a total protective layer 24 inches thick, that is chemically resistant to the waste and leachate. It shall be designed with a bottom slope to achieve the required leachate head after the predicted settlement determined by the foundation analysis. Leachate collection systems incorporating synthetic drainage materials may be used if it can be demonstrated that they are equivalent to or more effective than the granular design, including chemical compatibility, flow under load, and protection of the geomembrane liner.

(5) Leachate recirculation. Leachate recirculation systems shall only be used at solid waste disposal units that have been designed for leachate recirculation and meet the following requirements:

- (a) The landfill shall be lined and have a leachate collection and removal system.
- (b) Ditches, berms, or other devices shall be installed to control any leachate runoff. Initial and intermediate cover receiving recirculated leachate shall be graded to shed runoff into the leachate collection system and to minimize mixing of leachate runoff and storm water.
- (c) Initial and intermediate cover shall be permeable to the extent necessary to prevent perched water conditions and gas buildup.

17-701.400(4)(a) - 17-701.400(5)(c)

(d) Leachate shall not be recirculated during weather conditions or in quantities that may cause runoff outside the solid waste disposal unit, surface seeps, wind-blown spray, or exceedance of the limits of the leachate head on the liner. Ponding is prohibited unless it is an integral part of the design plan.

(e) A gas management system shall be implemented to control odors and migration of methane.

(f) Recirculation of leachate is prohibited on top of areas where final cover has been applied. Irrigation of the final vegetative cover may be done with treated leachate which meets the water quality standards of the receiving water body, if such irrigation does not contribute significantly to leachate generation.

(6) Leachate storage tanks and leachate surface impoundments.

(a) The requirements of this subsection apply to all leachate storage tanks and leachate surface impoundments constructed after January 6, 1993. Leachate storage tanks in use on January 6, 1993 are not required to retrofit to comply with this subsection unless leakage, corrosion or other defects are found. Leachate storage impoundments in use on January 6, 1993 shall be replaced or modified to conform to this subsection by January 6, 1995.

(b) Surface impoundments for leachate treatment or storage that are located at landfills are subject to the following requirements:

1. Surface impoundments shall be constructed so that the bottom of the liner system is not subject to fluctuations of the ground water so as to adversely impact the integrity of the liner system. The applicant shall demonstrate that the surface impoundment design will minimize infiltration of leachate into the environment so that ground water and surface water quality standards and criteria are not violated.

2. The surface impoundment shall be designed in segments such that any one segment may be taken out of service for inspection and repair with no interruption of service.

3. The impoundment shall have a double liner system consisting of an upper and lower 60-mil minimum thickness geomembrane, and a leak detection and collection system between the geomembranes with a minimum hydraulic conductivity of one cm/sec. The lower geomembrane shall be placed directly on a subbase which is at least six inches thick and has a saturated hydraulic conductivity of less than or equal to 1×10^{-5} cm/sec. The leak detection and collection system shall be checked daily. The design of the upper liner shall include calculations to predict the potential leakage through the upper liner. If the daily

17-701.400(5)(d) - 17-701.400(6)(b)3.

checks indicate the upper liner is leaking at a rate greater than predicted by the design calculations, the Department shall be notified. If the leakage rate will result in the flooding of the leak detection and collection system, the impoundment shall be emptied and the liner repaired.

4. To preserve the liner integrity and prevent uplift, ballast material such as rounded gravel or sand, that will not cause damage to the geomembrane liner, shall be placed on top of any liner which is located below the water table.

5. A minimum of two feet of freeboard above the depth which would occur in the event of a 25-year, 24-hour storm shall be maintained in leachate surface impoundments.

6. Vectors and off-site odors shall be controlled.

(c) Above ground leachate storage tanks that are located at solid waste management facilities are subject to the following requirements:

1. Tanks shall be constructed of concrete, steel or other material approved by the Department. Tanks shall be supported on a well drained, stable foundation.

2. Bottoms of steel tanks that rest on earthen material shall be cathodically protected with either sacrificial anodes or an impressed current system which is designed, fabricated, and installed in accordance with an engineering plan approved by the Department.

3. The exterior surfaces of all steel storage tanks shall be protected by a primer coat, a bond coat, and two or more final coats of paint or other surface coating system designed to prevent corrosion and deterioration.

4. The interior of all tanks shall consist of a material or must be lined with a material, resistant to the liquid being stored.

5. All aboveground tanks shall have a secondary containment system which may consist of dikes, liners, pads, ponds, impoundments, curbs, ditches, sumps, or other systems capable of containing the stored leachate. The design volume for the secondary containment system shall be 110 percent of the volume of either the largest tank within the containment system or the total volume of all interconnected tanks, whichever is greater.

6. The secondary containment system shall be constructed of materials compatible with the liquid stored. The containment system shall be constructed of either:

a. A minimum three-foot layer of compacted soil with a maximum saturated hydraulic conductivity of 1×10^{-7} cm/sec or one foot of compacted soil with a maximum saturated hydraulic conductivity of 1×10^{-8} cm/sec with two feet of protective cover; or

b. A concrete pad that will maintain its integrity for the lifetime of the tank with a corrosion resistant coating; or

17-701.400(6)(b)3.(cont'd.) - 17-701.400(6)(c)6.b.

c. A geomembrane of a minimum thickness of 60 mils, with a maximum water vapor transmission rate of $0.24 \text{ g}/(\text{m}^2 \times \text{day})$.

7. A system shall be designed to contain and remove storm water from the secondary containment area. Provisions shall be included for the removal of any accumulated precipitation and be initiated within 24 hours or when 10 percent of the storage capacity is reached; whichever occurs first. Disposal of this stormwater shall be in accordance with the requirements of Rule 17-701.400(9), F.A.C.

8. All aboveground tanks shall be equipped with an overfill prevention system which includes level sensors and gauges, high level alarms, or automatic shutoff controls. The overfill control equipment shall be inspected weekly by the facility operator to ensure it is in good working order.

9. The exposed exterior of all aboveground tanks shall be inspected weekly by the facility operator for adequacy of the cathodic protection system, leaks, corrosion, and maintenance deficiencies. Interior inspection of tanks shall be performed whenever the tank is drained or at a minimum of every three years. If the inspection reveals a tank or equipment deficiency, leak, or any other deficiency which could result in failure of the tank to contain the leachate, remedial measures shall be taken immediately to eliminate the leak or correct the deficiency. Inspection reports shall be maintained and made available to the Department upon request for the lifetime of the liquid storage system.

(d) Underground leachate storage tanks that are located at solid waste management facilities are subject to the following requirements:

1. Tanks shall be constructed of concrete, fiberglass, reinforced plastic, steel that is cathodically protected, or steel that is clad with fiberglass.

2. A secondary containment and a continuous leak detection system shall be installed in the form of a double-walled tank, designed as an integral structure so that any release from the inner tank is completely contained by the outer shell.

a. The interstitial space shall be monitored at least once per week by the facility operator for tightness using pressure monitoring, vacuum monitoring, electronic monitoring or an approved equivalent method.

b. The tank system shall be protected from both corrosion of the primary tank interior and the external surface of the outer shell.

c. All resistant coatings applied to the primary tank interior shall be compatible with the stored leachate.

17-701.400(6)(c)6.c. - 17-701.400(6)(d)2.c.

d. Cathodic protection systems, where installed, shall be inspected at least weekly by the facility operator. Any deficiency in the cathodic protection system shall be corrected when discovered.

3. All underground tanks shall be equipped with an overfill prevention system which includes level sensors and gauges, high level alarms, or automatic shutoff controls. The overfill control equipment shall be inspected weekly by the facility operator to ensure it is in good working order.

4. Inspection and leak detection monitoring reports shall be maintained at the facility and made available to the Department upon request for the lifetime of the liquid storage system.

(e) A schedule for routine maintenance of the leachate collection and removal system shall be established to ensure operation of the system. The maintenance schedule shall be a part of the facility operation plan.

(7) Liner systems construction quality assurance.

(a) Liner systems shall have a construction quality assurance plan to provide personnel with adequate information to achieve continuous compliance with the liner construction requirements. The plan shall include or refer to specifications and construction methods which use established engineering practices to construct a liner system and provide for quality control testing procedures and sampling frequencies. Sampling and testing shall be conducted in the field by trained personnel during construction and after construction completion. Such personnel will be under the direction of the construction quality assurance professional engineer, to assure the liner system will comply with the standards. The engineer or his designee shall be on-site at all times during construction to monitor construction activities.

(b) Liner systems shall be installed in accordance with a Department-approved construction quality assurance plan. Plans that comply with EPA Document 530-SW-86-031 shall be presumed to be in compliance with this section. The following minimum specific elements shall be included in the plan:

1. Responsibility and authority of all organizations and key personnel involved in permitting, designing, constructing, and providing construction quality assurance of the waste disposal facility shall be described fully;

2. Minimum qualifications of the construction assurance quality professional engineer and supporting personnel shall be in the plan to demonstrate that they possess the training and experience necessary to fulfill their identified responsibilities;

17-701.400(6)(d)2.d. - 17-701.400(7)(b)2.

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3. Procedures and tests that will be used to monitor the installation of the liner system components shall be described in detail;

4. The sampling activities, sample size, sample locations, frequency of testing, acceptance and rejection criteria, and plans for implementing corrective measures that may be necessary shall be described; and

5. Reporting requirements for construction quality assurance activities shall be described, including daily summary reports, observation data sheets, problem identification and corrective measures, and final documentation. All such documents shall be included in the final report which shall be forwarded to the Department.

(c) A laboratory experienced in the testing of geosynthetics, independent of the liner manufacturer and installer, shall perform the required testing which must include, at a minimum, conformance testing for all geosynthetics and geocomposites, and testing of seam shear and peel strength for geomembranes.

(d) The professional engineer in charge of construction quality assurance shall provide a signed, sealed final report and record drawings to the Department stating that the liner system has been installed in substantial conformance with the plans and specifications for the liner system.

(8) Soil liner construction quality assurance. In addition to the requirements of subsection (7) above, the following requirements apply to construction of the soil component of liner systems. All required testing and analysis shall be performed in accordance with generally accepted engineering procedures, such as those promulgated by the American Society for Testing and Materials (ASTM). Parenthetical references to ASTM methods are intended as guidance only.

(a) A construction quality assurance/quality control plan shall be prepared for each soil liner project to outline project specifications and construction requirements. The plan shall specify performance criteria for the soil liner, and provide quality control testing procedures and minimum sampling frequencies. In addition, the plan shall define the responsibilities of the parties that will be involved in soil liner construction, and shall present minimum qualifications of each party to fulfill their identified responsibilities.

(b) Field and laboratory testing during liner construction shall be conducted by a qualified soil testing laboratory representing the owner. A qualified field technician representing the owner shall provide full time, on-site inspection during liner construction. The field

17-701.400(7)(b)3. - 17-701.400(8)(b)

technician shall work under the supervision of a professional engineer with experience in soil liner construction.

(c) Prior to soil liner installation, an appropriate borrow source shall be located. Suitability of the liner construction materials from that source shall be determined in accordance with the following:

1. If demonstrated field experience is available from at least three prior successful projects of five or more acres each to document that a given borrow source can meet the requirements of the project specifications, then extensive laboratory testing of the borrow source will not be required. However, the source of material shall be geologically similar to and the methods of excavating and stockpiling the material shall be consistent with those used on the prior projects. Furthermore, a minimum of three representative samples from the appropriate thickness of the in-situ stratum or from stockpiles of the borrow material proposed for liner construction shall be submitted to an independent soil testing laboratory to document through index testing that the proposed material is consistent with the material used on prior successful projects. At a minimum, index testing shall consist of percent fines, Atterberg limits and moisture content determinations.

2. If demonstrated field experience as defined above is not available or cannot be documented, then the following requirements shall be met.

a. A field exploration and laboratory testing program shall be conducted by an independent soil testing laboratory to document the horizontal and vertical extent and the homogeneity of the soil strata proposed for use as liner material. A sufficient number of index tests from each potential borrow stratum shall be performed to quantify the variability of the borrow materials and to document that the proposed borrow material complies with specifications. At a minimum, the index tests shall consist of percent fines, Atterberg limits and moisture content determinations.

b. Sufficient laboratory hydraulic conductivity tests shall be conducted on samples representative of the range invariability of the proposed borrow source (ASTM D-5084). For each such sample, test specimens shall be prepared and tested to cover the range of molding conditions (moisture content and dry density) required by project specifications. The hydraulic conductivity tests shall be conducted in triaxial type permeameters. The test specimens shall be consolidated under an isotropic consolidation stress no greater than 10 pounds per square inch and permeated with water under an adequate backpressure to achieve saturation

17-701.400(8)(b)(cont'd.) - 17-701.400(8)(c)2.b.

of the test specimens. The inflow to and outflow from the specimens shall be monitored with time and the hydraulic conductivity calculated for each recorded flow increment. The test shall continue until steady state flow is achieved and relatively constant values of hydraulic conductivity are measured (ASTM D-5084). The borrow source will only be considered suitable if the hydraulic conductivity of the material, as documented on laboratory test specimens, can be shown to meet the requirements of the project specifications at the 98 percent confidence level.

(d) Prior to full-scale liner installation, a field test section or test strip shall be constructed at the site above a prepared subbase. The test strip shall be considered acceptable if the measured hydraulic conductivities of undisturbed samples from the test strip meet the requirements of the project specifications at the 98 percent confidence level. If the test section fails to achieve the desired results, additional test sections shall be constructed in accordance with the following requirements:

1. The test section shall be of sufficient size such that full-scale liner installation procedures can be duplicated within the test section;

2. The test section shall be constructed using the same equipment for spreading, kneading and compaction and the same construction procedures (e.g., number of passes, moisture addition and homogenization, if needed) that are anticipated for use during full-scale liner installation;

3. At a minimum, the liner test section shall be subject to the following field and laboratory testing requirements:

a. A minimum of five random samples of the liner construction material delivered to the site during test section installation shall be tested for moisture content (ASTM D-2216), percent fines (ASTM D-1140) and Atterberg limits (ASTM D-4318);

b. At least five field density and moisture determinations shall be performed on each lift of the compacted liner test section;

c. Upon completion of the test section lift, the thickness of the lift shall be measured at a minimum of five random locations to check for thickness adequacy; and

d. A minimum of five Shelby tube or drive cylinder (ASTM D-2937) samples shall be obtained from each lift of the test section for laboratory hydraulic conductivity testing. Laboratory hydraulic conductivity testing shall be conducted in triaxial type permeameters (ASTM D-5084). The test specimens shall be consolidated under an isotropic consolidation stress no greater than 10 pounds per square inch and permeated with water under an adequate backpressure

17-701.400(8)(c)2.b.(cont'd.) - 17-701.400(8)(d)3.d.

to achieve saturation of the test specimens. The inflow to and outflow from the specimens shall be monitored with time and the hydraulic conductivity calculated for each recorded flow increment. The test shall continue until steady state flow is achieved and relatively constant values of hydraulic conductivity are measured (ASTM D-5084).

(e) Full scale liner installation may begin only after completion of a successful liner test section. During liner construction, quality control testing shall be provided to document that the installed liner conforms to project specifications. The testing frequencies for quality control testing are specified below; however, during construction of the first five acres of the liner, these frequencies shall be doubled. Samples shall be obtained from random locations selected by an independent soil testing laboratory. If there are indications of a change in product quality or construction procedures during liner construction, additional tests shall be performed to determine compliance.

1. Field testing during liner installation. The following field tests shall be performed:

a. Prior to the laying of the liner materials, the liner subbase shall be compacted to the specified density. Density tests shall be conducted at a minimum rate of two tests per acre;

b. A minimum of two moisture content and field density determinations shall be conducted per acre per lift of the compacted liner. The degree of compaction shall be checked using the one-point field Proctor test or other appropriate test procedures; and

c. A minimum of four thickness measurements shall be conducted per acre per lift of the compacted liner.

2. Laboratory testing during liner installation. The following laboratory tests shall be performed:

a. Percent fines (ASTM D-1140) of the liner construction material shall be determined at a minimum frequency of two tests per acre per lift of installed liner;

b. Atterberg Limits determinations shall be performed on one sample per acre per lift of installed liner; and

c. Hydraulic conductivity testing of Shelby tube or drive cylinder (ASTM D-2937) samples of the compacted liner shall be performed at a minimum frequency of one test per acre per lift. Laboratory hydraulic conductivity tests shall be conducted in triaxial type permeameters (ASTM D-5084). The test specimens shall be consolidated under an isotropic consolidation stress no greater than 10 pounds per square inch and permeated with water under an adequate backpressure to achieve saturation of the test specimens. The inflow to and outflow from the specimens shall be monitored with time and the hydraulic conductivity

17-701.400(8)(d)3.d.(cont'd.) - 17-701.400(8)(e)2.c.

calculated for each recorded flow increment. The test shall continue until steady state flow is achieved and relatively constant values of hydraulic conductivity are measured.

(f) If the test data from a liner section does not meet the requirements of the project specifications, additional random samples may be tested from that liner section. If such additional testing demonstrates that the thickness and hydraulic conductivity meet the requirements of the project specifications at the 95 percent confidence level, that liner section will be considered acceptable. If not, that liner section shall be reworked or reconstructed so that it does meet these requirements.

(9) Surface water management systems.

(a) Landfills shall have surface water management systems designed, constructed, operated, and maintained to prevent surface water from running on to waste filled areas, and a stormwater runoff control system designed, constructed, operated, and maintained to collect and control stormwater to meet the requirements of Chapter 17-25, F.A.C., and the requirements for management and storage of surface water in accordance with Chapter 373, F.S.

(b) Stormwater controls shall include retention or detention ponds, and drainage ways specifically designed and sized according to local drainage patterns, soil permeability, annual precipitation, area land use, and other characteristics of the contributing watershed.

(c) Stormwater management systems shall be designed to avoid mixing of stormwater with leachate. Stormwater or other surface water which comes into contact with the landfilled solid waste or mixes with leachate shall be considered leachate and is subject to the requirements of Rules 17-701.500(8) and 17-701.510(5), F.A.C.

(10) Gas control systems.

(a) Landfills that receive biodegradable wastes shall have a gas monitoring and control system designed to prevent explosions and fires, and to minimize off-site odors and damage to vegetation. Landfill gas control systems shall:

1. Be designed to prevent the concentration of methane and other gasses generated by the landfill from:
 - a. Exceeding twenty-five percent of the lower explosive limit for gasses in structures on- or off-site, excluding gas control or recovery components;
 - b. Exceeding the lower explosive limit for gasses at or beyond the landfill property boundary; and
 - c. Causing objectionable odors at or beyond the landfill property boundary;
2. Be designed for site-specific conditions and be installed in each section of the landfill that has been filled to design dimensions;

17-701.400(8)(e)2.c.(cont'd.) - 17-701.400(10)(a)2.

3. Be designed to reduce gas pressure in the interior of the landfill by collecting the gasses to prevent them from moving laterally. Collection pipes, pathways, or vents shall collect gas from at least the uppermost two-thirds of the filled waste or where the more anaerobic conditions exist. Air shall not be forced into the collection system. Passive venting or suction shall be used to extract gas; and

4. Not interfere with or cause failure of the liner or leachate control systems.

(b) Flaring of landfill gasses may be used as a method of gas control, particularly control of objectionable odors, in accordance with the permitting requirements of Chapter 17-296, F.A.C.

(c) Owners or operators of solid waste disposal units that have received biodegradable waste shall implement a routine gas monitoring program to ensure that the standards of paragraph (10)(a) of this section are met.

1. The location of monitoring points and frequency of monitoring shall be determined by the following factors:

- a. Soil conditions;
- b. The hydrogeologic conditions surrounding the facility;
- c. The hydraulic conditions surrounding the facility; and
- d. The location of facility structures and property boundaries.

2. All monitoring points shall be sampled quarterly, and the results reported to the Department.

3. If methane gas levels exceed the lower explosive limits specified in paragraph (10)(a) of this section, the owner or operator shall:

- a. Immediately take all necessary steps to ensure protection of human health and notify the Department;
- b. Within 7 days of detection, submit to the Department for approval a remediation plan for the methane gas releases. The plan shall describe the nature and extent of the problem and the proposed remedy. The remedy shall be completed within 60 days of detection unless otherwise approved by the Department.

(d) Landfills using piping or a similar conduit to convey gas shall be furnished with a positive means of gas condensate collection and disposal at each low point in the conveyance system.

(11) Landfill gas recovery facilities.

(a) Landfill gas recovery facilities are considered solid waste management facilities, and shall be constructed and operated only in accordance with a Department permit. Landfill gas recovery facilities that are operating without

17-701.400(10)(a)3. - 17-701.400(11)(a)

*Quarterly
monitoring*

a permit shall submit a complete application to the Department on or before July 6, 1993. If a gas recovery facility is included in the approved closure plan or closure permit of the landfill, no separate permit for the facility is required, provided that the facility must meet all the requirements of this subsection.

(b) The application be on Form 17-701.900(1), and shall contain at least the following:

1. The information contained in Rules 17-701.320(7) and 17-701.330(4), F.A.C.;

2. Where relevant and practical, the information required in Rule 17-701.600(4), F.A.C.;

3. An estimate of the quantities of gas condensate currently collected or expected to be collected, and a description of how the condensate is or will be disposed of;

4. A description of the procedures for sampling, analyzing, and reporting data from the condensate sampling;

5. A closure plan that shall include methods to control landfill gasses after operation of the recovery facility ceases and any other requirements contained in Rule 17-701.400(10), F.A.C.

(c) The owner or operator of a gas recovery facility shall post a performance bond to cover the estimated costs of closing the facility. If the gas recovery facility is included in the approved closure plan or closure permit of the landfill, and if the closure costs are included in the landfill closure cost estimates for which financial responsibility is required by Rule 17-701.630, F.A.C., then no separate proof of financial responsibility is required.

(12) Landfills in ground water. A landfill constructed so that the bottom liner is constantly in contact with ground water is not prohibited by this rule. However, an applicant proposing such a design shall include special design features which demonstrate that the landfill will provide an equivalent degree of protection for the environment as would a similar landfill whose bottom liner is not in contact with ground water. Such a design is not entitled to the presumption of compliance with performance standards which is set forth in subsection (1) of this section. In addition to any other assurances of financial responsibility for closure, an applicant shall provide a performance bond sufficient to ensure long-term maintenance and operation of the leachate collection system.

Specific Authority: 403.061, 403.704, F.S.

Law Implemented: 403.702, 403.704, 403.707, F.S.

History: New 1-6-93.

17-701.400(11)(a) (cont'd.) - 17-701.400(History)

17-701.410 Hydrogeological Investigation Requirements.

(1) Hydrogeological investigation and site report. The hydrogeological investigation and site report required by Rule 17-701.330(4), F.A.C., shall be conducted by or under the supervision of a professional geologist or professional engineer with experience in hydrogeologic investigations, and shall:

(a) Define the landfill site geology and hydrology and its relationship to the local and regional hydrogeologic patterns including:

1. Direction and rate of ground water and surface water flow, including seasonal variations;
2. Background quality of ground water and surface water;
3. Any on site hydraulic connections between aquifers;
4. For all confining layers, semi-confining layers, and all aquifers below the landfill site that may be affected by the landfill, the porosity or effective porosity, horizontal and vertical permeabilities, and the depth to and lithology of the layers and aquifers; and
5. Topography, soil types and characteristics, and surface water drainage systems of the site and surrounding the site.

(b) Include an inventory of all the public and private water wells within a one-mile radius of the proposed landfill site. The inventory shall include, where available:

1. The approximate elevation of the top of the well casing and the depth of each well;
2. The name of the owner, the age and usage of each well, and the estimated daily pumpage; and
3. The stratigraphic unit screened, well construction technique, and static water levels of each well.

(c) Identify and locate any existing contaminated areas on the landfill site.

(2) Report verification. The site report and supporting information, including detailed description of the methods, calculations, and interpretations used, shall be signed and sealed by the professional engineer or geologist.

Specific Authority: 403.061, 403.704, F.S.

Law Implemented: 403.702, 403.704, 403.707, F.S.

History: New 1-6-93.

17-701.420 Geotechnical Investigation Requirements.

(1) Geotechnical site investigation. The geotechnical site investigation required by Rule 17-701.330(4), F.A.C., shall be conducted by or under the supervision of a professional engineer with experience in geotechnical engineering. Prior to any construction on the landfill

17-701.410(1) - 17-701.420(1)

site, the engineer shall define the engineering properties of the site that are necessary for the design, construction, and support of the landfill and all installations of the facility and shall:

(a) Explore and describe subsurface conditions including soil stratigraphy and ground water table conditions;

(b) Explore and address the presence of muck, previously filled areas, soft ground, lineaments, and sinkholes;

(c) Include estimates of the average and maximum high ground water table across the site; and

(d) Include a foundation analysis to determine the ability of the foundation to support the loads and stresses imposed by the landfill. It may include geotechnical measures necessary to modify the foundation to accommodate the imposed loads and stresses. The foundation shall be analyzed for short-term, end of construction, and long-term stability and settlement conditions. Considering the existing or proposed subgrade conditions and the landfill geometry, analysis shall include:

1. Foundation bearing capacity;

2. Subgrade settlements, both total and differential;

and

3. Subgrade slope stability.

(2) Report. The geotechnical site investigation report shall describe the site subsurface conditions and shall include, at a minimum, the methods used in the investigation, all soil boring logs and laboratory results, analytical calculations, cross sections, interpretations and conclusions.

(3) Report verification. The report and supporting documentation shall be signed and sealed by the professional engineer.

Specific Authority: 403.061, 403.704, F.S.

Law Implemented: 403.702, 403.704, 403.707, F.S.

History: New 1-6-93.

17-701.430 Vertical Expansion of Landfills.

(1) Applicability. Construction of a solid waste disposal unit on top of or against the side slopes of a previously filled landfill, whether active, closed, or inactive is considered vertical expansion of that landfill. Vertical expansion shall require either a modification of the landfill permit, or a new permit if the landfill has been closed. The following requirements shall apply:

(a) The vertical expansion shall not cause or contribute to any leachate leakage from the existing landfill, and shall not adversely affect the closure design of the existing landfill.

17-701.420(1)(con't.) - 17-701.430(1)(a)

(b) For vertical expansion over lined landfills, no interface liner is required between the old and new landfill slopes.

(c) For vertical expansion over unlined landfills or landfills that were not constructed in accordance with permit requirements, the vertical expansion shall comply with all the requirements of Rule 17-701.400, F.A.C., with the following exceptions:

1. Side slopes of six feet horizontal to one foot vertical rise or steeper require the installation of a single geomembrane slope liner overlain by a leachate collection and removal system;

2. The slope liner shall consist of a 60-mil or thicker geomembrane with a maximum water vapor transmission rate of 0.24 g/(m² x day) as determined by ASTM Method E96-80, procedure BW, "Test Methods for Water Vapor Transmission of Materials," Sections 04.06, 08.03, and 15.09.

3. The liner shall be protected from physical damage by a 24-inch thick protective layer above the liner and a bedding layer below the liner at least 24 inches thick to protect against the calculated differential settlement.

4. In all vertical expansion construction, grades shall slope toward the new expansion area.

5. If the vertical expansion consists exclusively of construction and demolition debris, the expansion must comply with the requirements of Rules 17-701.730 and 17-701.803, F.A.C., as well as paragraph (a) of this subsection.

6. If the vertical expansion consists of a composting operation, it must meet the requirements of Chapter 17-709, F.A.C., as well as paragraph (a) of this subsection.

7. If the vertical expansion consists of a Class III landfill, the provisions of Rule 17-701.340(3)(d), F.A.C., apply.

(d) The provisions of Rule 17-701.610(7), F.A.C., are applicable to all operations, including recycling operations, conducted on top of closed landfills.

(2) Construction requirements. The design for the vertical expansion shall also provide calculations and supporting information on the following factors:

(a) Construction on the slopes of a filled landfill requires a determination of foundation stability in accordance with Rule 17-701.420, F.A.C., and calculations for the total settlement of the waste in the existing landfill and the waste that will be disposed of in the new disposal area to be constructed. Total settlement calculations shall address both compression and differential settlement, and shall be based on worst case predictions.

17-701.430(1)(b) - 17-701.430(2)(a)

Total settlement calculations shall show the final elevations of the liner systems, that gravity drainage will be maintained, and that no other component of the design will be adversely affected.

(b) The vertical expansion design shall achieve a minimum safety factor of 1.5 for:

1. The liner system stability for liner systems installed over existing landfill slopes to prevent sliding along the interface between liner system components; and
2. Deep stability, to prevent sliding along all potential failure surfaces through the waste mass, along the liner systems, and through the foundation soils.

(c) Surface water management during construction of the vertical expansion over the slopes of an existing landfill shall be consistent with Rule 17-701.400(9), F.A.C., and shall require proper design of the drainageway at the interface between the existing slopes and vertical expansion area. The design shall:

1. Prevent infiltration into the existing and new landfills;
2. Minimize erosion of cover materials;
3. Carry the calculated flow; and
4. Comply with the cover requirements.

(d) A gas control system shall be installed to vent gas from the interface between the existing landfill slopes and the vertical expansion slopes to prevent accumulation of gas under the new liner system. Gas venting is achieved by installing a gas venting layer under the entire slope that will be covered by the new liner system. The gas venting layer shall convey gas to vertical vents at the crest of the interface slopes.

Specific Authority: 403.061, 403.704, F.S.

Law Implemented: 403.702, 403.704, 403.707, F.S.

History: New 1-6-93.

17-701.500 Landfill Operation Requirements.

(1) Operating personnel. All landfills shall have at least one trained operator at the landfill during all times when the landfill receives waste. Trained operators are those who have satisfied the requirements of Chapter 17-703, F.A.C. All landfills shall have at least one spotter at each working face at all times when the landfill receives waste to detect unauthorized wastes.

(2) Operation plan. Each landfill owner or operator shall have an operational plan that provides written, detailed instructions for the daily operation of the landfill. The operation plan shall be kept at or near the landfill facility and shall be accessible to landfill operators. The operation plan shall be revised if

17-701.430(2)(a)(cont'd.) - 17-701.500(2)

operational procedures change. The plan shall include procedures for:

- (a) Designation of persons responsible for operation and maintenance of the facility;
- (b) Contingency operations, alternate waste handling and disposal methods in case of emergency such as a fire, natural disaster or equipment failure;
- (c) Controlling the type of waste received at the site. The plan shall specify inspection procedures, number and location of spotters for each working face, and procedures to be followed if prohibited wastes are discovered;
- (d) ~~Weighing~~ incoming waste; — ~~As per 17-701.500(2)~~
- (e) Vehicle traffic control and unloading;
- (f) Method and sequence of filling waste;
- (g) Waste compaction and application of cover;
- (h) Operations of gas, leachate, and stormwater controls; and
- (i) Water quality monitoring.

(3) Operating record. The operating record shall consist of all records, reports, analytical results, and notifications required by this chapter, as well as the training verifications required by Chapter 17-703, F.A.C. The record is considered part of the operation plan, and shall be kept with the plan at or near the landfill facility. The operating record shall be available for inspection at reasonable times by Department personnel.

(4) Waste records.

(a) The owner or operator of a landfill shall weigh all solid waste as it is received. Landfill operators shall record, in tons per day, the amount of solid waste received and shall estimate the amount of wastes listed in paragraph (b) of this subsection. Waste reports shall be compiled monthly, and copies shall be provided to the Department quarterly.

*Quarterly
waste reports*

(b) Types of waste received:

- | | |
|---------------------------------------|---------------------------------|
| 1. Household waste | 7. Agricultural waste |
| 2. Commercial waste | 8. Industrial waste |
| 3. Ash residue | 9. Yard trash |
| 4. Incinerator by-pass waste | 10. Sewage sludge |
| 5. Construction and demolition debris | 11. Industrial sludge |
| 6. Treated biohazardous waste | 12. Water/air treatment sludges |

(5) Control of access. To prevent unauthorized waste disposal, access to and use of the facility shall be controlled by fencing, gates, or other barriers, as well as signs and facility personnel. Public access and receipt of wastes shall occur only when an attendant is on duty.

17-701.500(2) (cont'd.) - 17-701.500(5)

(6) Monitoring of waste.

(a) The owner or operator shall implement a load checking program to detect and discourage attempts to dispose of unauthorized wastes at the landfill. The load checking program shall consist of the following minimum requirements:

1. The landfill operator shall examine at least three random loads of solid waste delivered to the landfill each week. The waste collection vehicle drivers selected by the inspector shall be directed to discharge their loads at a designated location within the landfill. A detailed inspection of the discharged material shall be made for any unauthorized wastes. If the landfill owner or operator also owns or operates a transfer station, this inspection may be carried out at that transfer station before delivery of the waste to the landfill.

2. If unauthorized wastes are found, the facility shall contact the generator, hauler, or other party responsible for shipping the waste to the landfill to determine the identity of the waste sources.

(b) Handling hazardous wastes.

1. If any regulated hazardous wastes are identified by random load checking, or are otherwise discovered to be improperly deposited at the landfill, the landfill operator shall promptly notify the Department, the person responsible for shipping the wastes to the landfill, and the generator of the wastes, if known. The area where the wastes are deposited shall immediately be cordoned off from public access. If the generator or hauler cannot be identified, the landfill operator shall assure the cleanup, transportation, and disposal of the waste at a permitted hazardous waste management facility.

2. Subsequent shipments from sources found or suspected to be previously responsible for shipping regulated hazardous waste shall be subject to precautionary measures prior to the solid waste management facility accepting wastes.

(c) Recording inspection results. Information and observations resulting from each random inspection shall be recorded in writing and retained at the landfill for at least three years. The recorded information shall include, at a minimum: the date and time of the inspection; the names of the hauling firm and the driver of the vehicle; the vehicle license plate number; the source of the waste, as stated by the driver; and observations made by the inspector during the detailed inspection. The written record shall be signed by the inspector.

17-701.500(6) - 17-701.500(6)(c)

(d) Training. Inspectors, equipment operators, weigh station attendants, and spotters shall be trained to identify unauthorized wastes or potential sources of regulated hazardous wastes. The training program shall emphasize familiarity with containers and labels typically used for hazardous wastes and hazardous materials.

(7) Waste handling requirements.

(a) All solid waste at Class I and Class II landfills shall be spread in layers of approximately two feet in thickness and compacted to approximately one foot in thickness or as thin a layer as practical before the next layer is applied. Solid waste at all Class III sites shall be spread in layers and compacted once every week using suitable heavy equipment. Bulky materials which are not easily compacted should be worked into other materials as much as practical.

(b) The first layer of waste placed above the liner and leachate collection system shall be a minimum of four feet in compacted thickness and consist of selected wastes containing no large rigid objects that may damage the liner or leachate collection system.

(c) Solid waste shall be formed into cells to construct horizontal lifts. The working face of the cell, and side grades above land surface, shall be at a slope no greater than three feet horizontal to one foot vertical rise. Lift depth should normally not exceed 10 feet but may be deeper, depending on specific operations, daily volume of waste, width of working face, and good safety practices.

(d) The working face shall be only wide enough to accommodate vehicles discharging waste, and to minimize the exposed area and unnecessary use of cover material.

(e) Initial cover shall be applied and maintained at landfills in order to minimize any adverse environmental, safety, or health effects such as those resulting from birds, unauthorized wastes, blowing litter, odors, vectors, or fires. The minimum frequency for applying cover is:

1. For Class I landfills, at the end of each working day, except for those areas where solid waste will be deposited on the working face within 18 hours;
2. Class II, every four days and at the end of each work week;
3. Class III, at the end of each work week.

(f) An intermediate cover in addition to the six-inch initial cover shall be applied and maintained within seven days of cell completion if additional solid waste will not be deposited within 180 days of cell completion. The landfill operator may remove all or part of the intermediate cover before placing additional waste or installing final cover.

17-701.500(6)(d) - 17-701.500(7)(f)

90 days
final
(g) Solid waste disposal units which have been filled to design dimensions shall receive final cover within 180 days after attaining final elevation or in accordance with the closure plan for the landfill.

(h) Uncontrolled and unauthorized scavenging shall not be permitted at any landfill site. Controlled salvaging for recycling may be permitted by the landfill operator.

(i) A litter policing operation shall be employed to keep litter from leaving the working area of the landfill. Litter outside the working area shall be picked up within 24 hours. Some litter may be exposed through the initial cover if it is in traffic areas and away from public view.

(j) Erosion control measures shall be employed to correct any erosion which exposes waste or causes malfunction of the storm water management system.

(8) Leachate management.

(a) The landfill operator is responsible for leachate level monitoring, sampling, analysis of the landfill leachate, and for providing copies of the leachate analysis to the Department.

(b) The landfill operator is responsible for the operation of the leachate collection and removal system and for maintaining the system as designed for the design period. Leachate shall be collected and treated as necessary to meet surface and ground water quality standards of Chapter 17-3 and 17-302, F.A.C. If the leachate is classified as a hazardous waste, it shall be managed in accordance with Rule 17-730, F.A.C.

(c) Leachate may be discharged to an off-site treatment plant. The landfill operator is responsible for having a written contract or agreement with the off-site treatment plant to discharge leachate to the plant.

(d) On-site leachate treatment or pretreatment systems are part of the leachate collection and removal system and shall be designed according to the expected characteristics of the leachate. The design may include adjustments to the system as necessary to accommodate changing leachate characteristics.

(e) The landfill operator shall have a prepared contingency plan to handle leachate collection, removal, and treatment problems such as interruptions of discharges to a treatment plant.

(f) Quantities of leachate collected by the leachate collection and removal system shall be recorded in gallons per day before on-site treatment or transport off-site.

(g) A recording rain gauge shall be installed, operated, and maintained to record precipitation at the landfill. Precipitation records shall be maintained and used by the permittee to compare with leachate generation rates.

17-701.500(7)(g) - 17-701.500(8)(g)

(9) Gas monitoring. All landfills that have received organic wastes shall implement a routine gas monitoring program to meet the requirements of Rule 17-701.400(10), F.A.C.

(10) Stormwater system management. Stormwater management systems shall be operated and maintained as necessary to meet applicable standards of Chapters 17-3, 17-302, and 17-25, F.A.C.

(11) Equipment and operation features. The landfill shall have:

(a) Sufficient equipment to ensure proper operation of the landfill and for excavating, spreading, compacting, and covering waste. All equipment shall have all personnel safety devices required by law;

(b) Sufficient reserve equipment or arrangement to obtain additional equipment within 24 hours of equipment breakdown;

(c) Communications equipment for emergency and routine communications;

(d) Personnel shelter and sanitary facilities and first aid equipment;

(e) Dust control methods;

(f) Fire protection and fire-fighting capabilities adequate to ensure safety of employees and to control accidental burning of solid waste in the landfill. Fire protection includes procedures for notification of local fire protection agencies for assistance in emergencies;

(g) Litter control devices, portable fences, or other suitable devices; and

(h) Signs indicating the name of the operating authority, traffic flow, hours of operations and restrictions or conditions of disposal.

(12) Roads. The landfill shall have:

(a) An all-weather access road that is passable and safe under normal operating conditions; and

(b) An inside perimeter road and other on-site roads, maintained to allow access to monitoring devices and stormwater controls, for landfill inspections and fire fighting.

(13) Recordkeeping. In addition to records and reporting required by other sections of this chapter, the landfill owner or operator shall:

(a) Keep records of all information used to develop or support the permit applications and any supplemental information submitted to comply with this chapter pertaining to construction of the landfill throughout the design period. Records pertaining to the operation of the landfill shall be kept for the design period of the landfill.

17-701.500(9) - 17-701.500(13)(a)

(b) Retain records of all monitoring information, including calibration and maintenance records, all original chart recordings for continuous monitoring instrumentation, and copies of all reports required by permit, for at least ten years. Background water quality records shall be kept for the design period of the landfill.

(c) Maintain an annual estimate of the remaining life and capacity in cubic yards of the existing, constructed landfill and remaining capacity and site life of other permitted areas not yet constructed. The annual estimate shall be based on a summary of the heights, lengths, and widths of the solid waste disposal units. The estimate shall be made and reported annually to the Department.

Specific Authority: 403.061, 403.704, F.S.

Law Implemented: 403.702, 403.704, 403.707, F.S.

History: New 1-6-93.

17-701.510 Water Quality and Leachate Monitoring Requirements.

(1) Applicability.

(a) This section shall apply only to applications for construction or lateral expansion of a solid waste disposal unit received after January 6, 1993. However, at the time of permit renewal or, if the permit is not renewed, at the time of closing, owners or operators of all landfills receiving waste after January 6, 1993 shall sample and analyze their leachate in accordance with subsection (5) and paragraph (6)(b) of this section, and shall sample and analyze quarterly all monitoring wells specified in the permit for the water indicator parameters listed in paragraph (8)(a) of this section. This provision does not relieve a person from compliance with any permit condition or Department order, nor does it limit the Department's authority to modify a permit or ground water monitoring plan in accordance with Chapter 17-522, F.A.C.

(b) This rule is intended to supplement the ground water monitoring requirements of Chapter 17-522, F.A.C. Any provisions of Chapter 17-522, F.A.C., which are not in direct conflict with the provisions of this rule remain applicable.

(2) Water quality monitoring plan and system.

(a) The permit applicant shall provide to the Department a water quality monitoring plan for the landfill that describes the proposed ground water, surface water, and leachate monitoring systems. The plan shall be based on the hydrogeological investigation required in Rule 17-701.410, F.A.C., and be prepared by, or under the supervision of, a

17-701.500(13)(b) - 17-701.510(2)(a)

professional geologist or professional engineer with experience in hydrogeologic investigations. The plan shall be signed and sealed by the professional geologist or professional engineer.

(b) The water quality monitoring system shall be installed and consist of: a sufficient number of ground water wells installed at appropriate locations and depths to yield ground water samples from the uppermost aquifer, as well as other aquifers reasonably expected to be affected by the landfill; surface water monitoring points installed at locations to yield samples of surface water that may be affected by the landfill; and leachate monitoring points to yield representative leachate samples. All sampling and analysis activities shall be performed by organizations that have Comprehensive Quality Assurance Plans approved in accordance with Rule 17-160.300(8), F.A.C.

(3) Ground water monitoring.

(a) Two or more detection wells shall be located, and within zone of discharge hydraulically downgradient from the solid waste disposal unit, to detect leachate releases. These wells shall be located no more than 50 feet from the edge of the solid waste disposal unit, unless site specific conditions make such placement impractical. These wells shall be capable of monitoring each solid waste disposal unit as it is operated.

(b) Multiple downgradient compliance wells shall be located at or immediately adjacent to the compliance line of the zone of discharge, if required in subsection (7) of ~~the~~ *the* subsection. If site-specific conditions require installation of compliance wells within the zone of discharge, then a confirmed exceedance of a ground water standard at such wells will be considered a violation of that standard.

(c) A sufficient number of background wells installed as part of the site hydrogeological investigation required in Rule 17-701.410, F.A.C., shall be maintained throughout the design life of the landfill to provide information on background water quality.

(d) Monitoring wells.

1. The location of each well, in degrees, minutes and seconds of latitude and longitude, the Universal Transverse Mercator coordinates, and the elevation of the top of the well casing to the nearest .01 foot, National Geodetic Vertical Datum, shall be determined by a registered Florida land surveyor. NGVD

2. An identification number shall be assigned by the Department to each monitoring well in accordance with the Department's Ground Water Monitoring System computer file.

17-701.510(2)(a)(cont'd.) - 17-701.510(3)(d)2.

The identification number shall be used on all water quality monitoring reports.

3. Well spacing shall be spaced no greater than 500 feet apart across the downgradient direction of ground water flow, and no greater than 1500 feet apart across the upgradient direction of ground water flow, in the uppermost aquifer within the zone of discharge, unless site specific conditions support the use of alternate well spacing. Conditions to be considered include, but are not limited to, ground water flow directions and rates, estimated longitudinal and transverse dispersivity rates, proximity to or presence of sensitive environments and ground water users, nature of the wastes, method of disposal, and the proposed design and size of the facility.

4. Well screens shall be located to readily detect representative ground water conditions within the saturated thickness of the uppermost aquifer within the zone of discharge. Well screens shall not act as conduits through confining layers between water bearing strata. Wells monitoring the unconfined water table shall be screened so that the water table can be sampled at all times. The applicant shall provide technical justification for the actual screen length chosen.

5. Any monitoring wells which are abandoned or which will be covered due to lateral expansions of a landfill or the construction of new solid waste disposal units shall be plugged as necessary so that they do not act as a conduit for any leachate release to the ground water.

6. Detection sensors capable of detecting changes in ground water that may indicate leachate releases, linked to a data recorder, may be used to augment detection wells or may be used as an alternative to detection wells, upon demonstration of their effectiveness to the Department.

(4) Surface water monitoring.

(a) All surface water bodies that may be affected by a contaminant release from the facility shall be monitored, except bodies of water contained completely within the property boundaries of the disposal site which do not discharge from the site to surface waters. In bodies of standing water, one or more representative monitoring points shall be located as close as practical to the facility. For flowing water bodies, a sufficient number of upgradient and downgradient locations shall be used to allow the effect of the landfill to be measured.

(b) Discharges from detention ponds for storm water shall be sampled at the point of discharge to waters of the state or from the property, whichever is closer to the detention pond.

17-701.510(3)(d)2.(cont'd.) - 17-701.510(4)(b)

(c) The details concerning the sampling locations and the analysis requirements shall be specified in the water quality monitoring plan. Each monitoring location shall be marked and its position shall be determined by a registered Florida land surveyor in degrees, minutes and seconds of latitude and longitude and Universal Transverse Mercator coordinates.

(5) Leachate sampling. The water quality monitoring plan shall specify the location of, and proposed protocol for, landfill leachate sampling to obtain a representative characterization of the leachate composition in the leachate collection and removal system as the leachate comes from the wastes and before it is subjected to conditions that may change the characteristics of the leachate. All sampling points shall be located to minimize pumping of leachate before sampling.

(6) Routine sampling frequency and requirements. Except as otherwise specified in a Department permit or order or in subsection (7) of this section, frequency of sampling and analysis shall be as follows:

(a) Background water quality.

1. Background water quality for a proposed landfill shall be determined by analysis of at least one water sample taken from each well that was installed, and each surface water monitoring location that was established, during the site hydrogeological investigation. The water quality information shall be submitted to the Department as part of the supporting information for the permit application.

2. Sampling and analysis for background ground water quality shall be for the parameters listed in paragraphs (8)(a) and (8)(d) of this section.

3. Sampling and analysis for background surface water quality shall be for the parameters listed in paragraph (8)(b) of this section.

(b) Leachate samplings.

1. Leachate shall be sampled and analyzed quarterly for the indicator parameters listed in paragraph (8)(c) of this section. In addition, leachate shall be sampled and analyzed annually for the parameters listed in paragraph (8)(d) of this section.

2. For landfills which are receiving waste, if this annual analysis indicates that a contaminant listed in 40 CFR 261.24 exceeds the regulatory level listed therein, the permittee shall initiate a monthly sampling and analysis program. If in any three consecutive months the same listed contaminant exceeds the regulatory level, the permittee shall, within 90 days, initiate a program designed to

17-701.510(4)(c) - 17-701.510(4)(b)2.

identify the source and reduce the presence of the contaminant in the leachate so that it no longer exceeds the regulatory level. This program may include additional monitoring of waste received and additional up-front separation of waste materials. Any leachate which is not recirculated or taken to a permitted domestic wastewater treatment facility shall be treated or managed so that no contaminant exceeds the regulatory level. If in any three consecutive months no listed contaminant is found to exceed the regulatory level, the permittee may discontinue the monthly sampling and analysis and return to a routine sampling schedule.

(c) All detection wells, and a representative sample of background wells, shall be sampled and analyzed quarterly for the ground water indicator parameters listed in paragraph (8)(a) of this section.

(d) Compliance monitoring wells shall be sampled and analyzed no less than quarterly, as required in subsection (7) of this section.

(e) Surface waters shall be sampled and analyzed quarterly for the parameters listed in paragraph (8)(b) of this section.

(7) Assessment monitoring and corrective action.

(a) Assessment monitoring. If indicator parameters are detected in detection wells in concentrations which are significantly above background water quality, or which are at levels above the Department's water quality standards or criteria specified in Chapter 17-520, F.A.C., the permittee shall resample the wells within 15 days after the sampling data is received, to confirm the data. If the data is confirmed, the permittee shall notify the Department in writing within 14 days of this finding. Upon notification by the Department, the permittee shall initiate assessment monitoring as follows:

1. Routine monitoring of all monitoring wells, surface water monitoring locations and leachate sampling locations shall continue according to the requirements of subsection (6) of this section.

2. Within 90 days of initiating assessment monitoring and annually thereafter, the permittee shall sample and analyze a representative sample of the background wells and all affected detection wells for the parameters listed in paragraph (8)(d) of this section. Any new parameters detected and confirmed in the affected downgradient wells shall be added to the routine ground water monitoring parameter lists required in subsection (6) of this section.

3. Within 90 days of initiating assessment monitoring, the permittee shall install and sample compliance monitoring

17-701.510(4)(b)2.(cont'd.) - 17-701.510(7)(a)3.

wells at the compliance line of the zone of discharge and downgradient from the affected detection monitoring wells. These wells shall be installed according to the requirements of paragraph (3)(d) of this section, and samples shall be analyzed for the parameters listed in paragraphs (8)(a) and (d) of this section.

4. Within 180 days of initiating assessment monitoring, the permittee shall submit a contamination assessment plan to the Department. This plan shall be designed to delineate the extent and cause of the contamination, to predict the likelihood that Department water quality standards will be violated outside the zone of discharge, and to evaluate methods to prevent any such violations. Upon approval by the Department, the permittee shall implement this plan and submit a contamination assessment report in accordance with the plan. All reasonable efforts shall be made by the permittee to prevent further degradation of water quality from the landfill activities.

5. If for two consecutive sampling events the concentrations of all indicator parameters and the parameters listed in paragraph (8)(d) of this section are at or below background values, the permittee, upon approval by the Department, may discontinue assessment monitoring and return to the routine monitoring requirements in subsection (6) of this section.

(b) Corrective actions.

1. If the contamination assessment report indicates that water quality standards are likely to be violated outside the zone of discharge, the permittee shall, within 90 days, submit a remedial action plan to the Department. Upon approval, the permittee shall initiate corrective actions to prevent such violations.

2. If any contaminants are detected and confirmed in compliance wells in concentrations which exceed both background levels and Department water quality standards or criteria, or are detected and confirmed in detection wells in concentrations which are above Department water quality minimum criteria, the permittee shall notify the Department within 14 days of this finding and shall initiate corrective actions. Assessment monitoring shall continue according to the requirements of paragraph (7)(a) of this section.

(8) Water quality parameters. The following list of water quality monitoring parameters shall be used for each type of sampling to be done.

(a) Ground water indicator parameters:

Field parameters

Static water level in wells
before purging

Laboratory parameters

Ammonium (NH₄)

17-701.510(7)(a)3.(cont'd.) - 17-701.510(8)(a)

Field parameters

Specific conductivity
pH
Dissolved oxygen
Turbidity
Temperature
Colors and sheens

Laboratory parameters

Arsenic
Bicarbonate
Cadmium
Chlorides
Chromium
Iron
Lead
Mercury
Nitrate
Sodium
Total dissolved solids
(TDS)
Total organic carbon
(TOC)
EPA 601/602 Analytes

(b) Surface water indicator parameters;

Field parameters

Specific conductivity
pH
Dissolved oxygen
Turbidity

Temperature
Colors, sheens

Laboratory parameters

Unionized ammonia
Arsenic
Bicarbonate
Biochemical oxygen
demand (BOD₅)
Cadmium
Chromium
Copper
Iron
Lead
Mercury
Nitrate
Sodium
Zinc
Total dissolved solids
(TDS)
Total organic carbon
(TOC)
EPA 601/602 Analytes

(c) Leachate indicator parameters;

Field parameters

Specific conductivity
pH
Dissolved oxygen
Colors, sheens

Laboratory parameters

Ammonium (NH₄)
Arsenic
Bicarbonate
Cadmium
Chlorides
Chromium

17-701.510(8)(a)(cont'd.) - 17-701.510(8)(c)

Iron
Lead
Mercury
Nitrate
Sodium
Total dissolved solids
(TDS)
Total organic carbon
(TOC)
EPA 601/602 Analytes

(d) Those parameters listed in 40 CFR Part 258, Appendix II.

Quarterly Report
(9) Water quality monitoring reporting. The landfill owner or operator shall report all water quality monitoring results to the Department on a quarterly basis. The operator of the landfill shall notify the Department at least 14 days before the sampling is scheduled to occur so that the Department may collect split samples.

(a) Quarterly reporting periods shall be established in the facility permit. The report shall include at least the following:

1. The facility name and identification number, sample collection dates, and analysis dates;
2. All analytical results, including all peaks even if below maximum contamination levels;
3. Identification number and designation of all surface water and ground water monitoring points;
4. Applicable water quality standards;
5. Quality assurance, quality control notations;
6. Method detection limits;
7. STORET code numbers for all parameters;
8. Water levels recorded prior to evaluating wells or sample collection. Elevation reference shall include the top of the well casing and land surface at each well site at a precision of plus or minus 0.1 foot (NGVD); and
9. An updated ground water table contour map, with contours at no greater than one-foot intervals, which indicates ground water elevations and flow direction; and
10. A summary or trend analysis of any water quality standards or criteria that are exceeded, including elevations of parameters above background levels;

Annual Report
(b) At the end of each year of data collection, with the year beginning with the date the landfill permit was issued, a technical report, prepared, signed and sealed by a professional geologist or professional engineer with experience in hydrogeologic investigations, shall be submitted to the Department. The report shall summarize and

17-701.510(8)(c)(cont'd.) - 17-701.510(9)(b)

interpret the water quality data and water level measurements collected during the past two years. The report shall contain, at a minimum, the following:

1. Tabular and graphical displays of the data, including hydrographies for all monitor wells;
2. Trend analyses;
3. Comparisons among shallow, middle, and deep zone wells;
4. Comparisons between upgradient and downgradient wells;
5. Correlations between related parameters such as total dissolved solids and specific conductance;
6. Discussion of erratic and/or poorly correlated data; and
7. A summary ground water table contour ^{data} map and an interpretation of the quarterly ground water contour maps.

(c) All field and laboratory records specified in Rules 17-160.600 - .630, F.A.C., shall be made available to the Department and be retained for the design period of the landfill.

Specific Authority: 403.061, 403.704, F.S.

Law Implemented: 403.702, 403.704, 403.707, F.S.

History: New 1-6-93.

17-701.520 Special Waste Handling.

(1) Motor vehicles. Motor vehicles that are brought to a landfill may be stored temporarily in a separate area until they are removed for recycling. If vehicles cannot be recycled, all fluids and batteries shall be removed from the vehicles and they shall be compacted to minimize voids before being placed in the Class I area.

(2) Disaster debris. In the event of a natural disaster, during which large volumes of debris are accumulated (such as trees and buildings that have been destroyed) the debris may be transported to an area remote from habitation and burned in accordance with Rule 17-256, F.A.C.

(3) Landfilling shredded waste. Landfilling shredded solid waste without daily soil cover may be an environmentally acceptable method of final disposal at a landfill that meets the requirements of Rule 17-701.340, F.A.C. A properly designed and operated shredding facility shall be approved by the Department contingent upon the following conditions:

(a) Particle size. Seventy percent of all shredded waste, dry weight, shall be capable of passing through a three-inch screen.

(b) Waste shall be spread to a smooth contour and compacted promptly after placement and left undisturbed to prevent odors. Blowing of shredded waste by the wind shall be controlled.

17-701.510(9)(b)(cont'd.) - 17-701.520(3)(b)

(c) All solid waste storage areas in the shredding facility shall be maintained and cleaned at the end of each day's operations or during continuous operation, as necessary, to prevent vector problems. All equipment shall be designed and maintained to control spillage and to achieve the required product quality.

(d) An operational plan shall include provisions for removal and proper disposal of wastes within 24 hours should the shredding facility breakdown or operational quality be diminished. The operational plan shall include provision for a stock pile of emergency soil cover material and a plan to convert the operation to a conventional landfill operation.

(e) Shredded waste disposal units that fill design dimensions shall be closed in accordance with Rule 17-701.600, F.A.C.

(4) Asbestos waste disposal.

(a) Asbestos-containing waste materials may be accepted for disposal at a permitted Class I, II, or III landfill. Each active waste disposal site that receives asbestos-containing waste material from a source covered under the National Emission Standards for Asbestos, 40 CFR Part 61, Subpart M, shall meet the requirements of 40 CFR Part 61.154, which are incorporated by reference herein. For purposes of this rule, the term "Administrator," when used in 40 CFR Part 61.154, shall mean Secretary of the Department of Environmental Regulation.

(b) The waste generator shall make arrangements with the landfill operator before disposal of such regulated asbestos-containing waste materials, and inform the operator of the quantity of the waste and the scheduled date the shipment will arrive at the landfill.

(c) The landfill operator shall direct the waste transporter to the designated disposal location. The disposal location shall be recorded in accordance with 40 CFR Part 61.154, and a record of the asbestos location shall be maintained.

(5) Contaminated soil. Soil which has been contaminated with petroleum products or any other products which are not hazardous wastes may be disposed of in permitted, lined landfills. Petroleum contaminated soil which has been treated pursuant to Chapter 17-775, F.A.C., may be disposed of at permitted disposal facilities and may, if it meets the criteria of Rules 17-701.200(24), (37), and (38), F.A.C., be used as cover material at permitted landfills.

(6) Ash residue. Ash residue from the burning of solid waste shall be managed in accordance with Chapter 17-702, F.A.C. Ash residue which meets the criteria of Rules

17-701.520(3)(c) - 17-701.520(6)

17-702.570(6) and 17-701.200(37), F.A.C., may be used as initial cover at permitted, lined landfills.

Specific Authority: 403.061, 403.704, F.S.

Law Implemented: 403.702, 403.704, 403.705, 403.707, 403.708, F.S.

History: Transferred from 10D-12.07, 10-1-74, Amended 5-24-79, 11-25-82, 7-10-84, 12-10-85, Formerly 17-7.06, 17-7.060, 17-701.060, Amended 1-6-93.

17-701.600 Landfill Final Closure.

(1) Applicability.

(a) Inactive landfills.

1. Landfills or solid waste disposal units which were closed in a manner approved by the Department prior to January 6, 1993, or which have received final cover before July 1, 1985, are exempt from the requirements of this section.

2. Owners or operators of landfills or solid waste disposal units which were no longer receiving wastes on January 6, 1993, which have not been closed in a manner approved by the Department, and which do not have an approved closure plan or closure permit shall comply with this section by January 6, 1994.

3. Owners or operators of landfills or solid waste disposal units which were no longer receiving wastes on January 6, 1993, which have not been closed in a manner approved by the Department, and which do have an approved closure plan or closure permit are exempt from the requirements of this section as long as the closure plan or closure permit is complied with.

(b) Active landfills. Landfills or solid waste disposal units which receive wastes after January 6, 1993, shall comply with the requirements of this section. Owners or operators of active landfills or solid waste disposal units which have an approved closure plan or closure permit on January 6, 1993 shall apply for modification of their plan or permit to comply with this section by January 6, 1994, or, if the landfill or solid waste disposal unit is not scheduled to close before the existing operation permit expires, at the time of permit renewal. Landfills or solid waste disposal units which are operating under a Department consent agreement, which have a closure permit, and which cease accepting wastes on or before December 1, 1992, are exempt from the requirements of this section except for Rule 17-701.600(5)(g), F.A.C.

(2) Closure schedule.

(a) At least one year prior to the projected date when wastes will no longer be accepted or when all solid waste disposal units are expected to reach design dimensions, the owner or operator shall provide a written notice to the

17-701.520(6)(cont'd.) - 17-701.600(2)(a)

Department with a schedule for cessation of waste acceptance and closure of the landfill. The closure schedule shall become an addendum to the landfill permit. If unforeseen circumstances do not allow the one-year notification, notice shall be provided as soon as the need to close the facility becomes apparent.

(b) Notice and advice to users. At least 120 days prior to the date when wastes will no longer be accepted at the landfill, the owner or operator shall advise users of the intent to close the landfill by posting signs at the entrance of the landfill giving the date of closing, the location of alternative disposal facilities, and the name of the person responsible for closing the landfill. These signs shall be maintained throughout the closing period. If unforeseen circumstances do not allow the 120 day notice to users, notice shall be provided as soon as the need to close the facility becomes apparent.

(c) Notice to the public. Within 10 days prior to the date when wastes will no longer be accepted at the landfill, the owner or operator shall publish a notice of the landfill closing in the legal advertising section of a newspaper of general circulation in the county where the activity is proposed, and shall provide proof of publication to the Department within seven days of publication.

(3) Closure permit requirements. The owner or operator shall submit an application to the Department for final closure of the landfill at least 90 days before the date when wastes will no longer be accepted. The application shall be on Form 17-701.900(1). If the landfill is operating under a Department permit, the owner or operator shall request a modification of the permit in lieu of submitting a closure permit application. The application or request for modification shall include a closure plan which is made up of the following:

- (a) A closure report;
- (b) A closure design plan;
- (c) A closure operation plan;
- (d) Closure procedures;
- (e) A plan for long-term care; and
- (f) A demonstration that proof of financial responsibility for long-term care will be provided.

(4) Closure report. A report on the final closure of the landfill shall address the following requirements, or shall contain an explanation of why the requirement is not applicable:

- (a) General landfill information which shall contain:
 - 1. Identification of the landfill;
 - 2. Location, description and vicinity map;

17-701.600(2)(a)(cont'd.) - 17-701.600(4)(a)2.

3. Total acreage of waste disposal areas and total acreage of landfill property;

4. Legal description of property on which the landfill is located;

5. History of the landfill including dates of construction and a description of the location and sequence of fill operations; and

6. Identification of types of waste disposed of in the completed landfill based on records, composition studies, operator memory, major waste depositors, or other information sources.

(b) The geotechnical investigation report and water quality monitoring plan required in Rule 17-701.330(4), F.A.C.

(c) Land use information which shall contain a discussion and maps indicating:

1. Identification of adjacent landowners;

2. Zoning;

3. Present land uses; and

4. Roads, highways, rights-of-way, or easements.

(d) A report on actual or potential gas migration in landfills that contain biodegradable wastes disposed of in porous soils which would allow migration of gas off the landfill property. Gas migration test points shall be located along property boundaries, particularly those adjacent to off-site occupied structures within 100 feet of the property boundary or where distressed vegetation is present. Test points are required along each boundary segment spaced as needed to detect gas migration. Test points shall extend at least three feet below ground surface. Where sand, gravel, or more gas permeable soil strata may interconnect the waste deposit and the property boundary, multiple depth sampling points are necessary to draw gas samples from the permeable layers. Methane concentrations shall be determined as a percent of the lower explosive limit. Methane concentrations shall not exceed the lower explosive limit at the property boundary or 25 percent of the limit within structures on the property.

(e) An assessment of the effectiveness of the landfill design and operation, which shall provide information about the effects of the landfill on adjacent ground and surface waters, and the landfill area. Specific concerns to be discussed are:

1. Results of the geotechnical investigation;

2. Effects of surface water runoff, drainage patterns, and storm water controls;

3. Extent and effects of methane gas migration, lower explosive limit percentage readings in migration paths, and description of the gas venting system;

17-701.600(4)(a)3. - 17-701.600(4)(e)3.

4. Condition of existing cover, thicknesses and types of soils or materials used for cover, and effectiveness of cover material as a leachate control mechanism; and

5. The nature and characteristics of the waste disposed of at the landfill.

(5) Closure design. The closure design plan shall consist of engineering plans and a report on closing procedures that apply to the final closing of solid waste disposal units during the operation of the landfill, the final closing of the landfill, and the monitoring and maintenance during the long-term care period. The closure design plan shall include the following information:

(a) A plan sheet showing phases of site closing.

(b) Drawings showing existing topography and proposed final grades.

(c) Provisions to close solid waste disposal units within the landfill as soon as they reach approved design dimensions and elevations and to finally close the landfill in accordance with the requirements of this rule. Landfills that are designed to be constructed in phases or sections shall include provisions for temporary closure of solid waste disposal units if subsequent, planned filling on top of them will not occur for six months or longer.

(d) Final elevations before settlement, based upon the capability of the foundation to support the total weight of the landfills, including water loading.

(e) Final side slope design. Side slopes of above-ground disposal units shall not be steeper than three feet horizontal to one foot vertical rise to control erosion of the final cover material. Such units shall incorporate reverse sloping benches or terraces into the side slopes of the landfill and shall contain down slope drainage ways with water flow energy dissipaters. Access for maintenance equipment shall be provided. Such designs shall address the susceptibility for erosion of the earthen material that is proposed for final cover relative to historical rainfall patterns for the area, the period between the patterns for the area, the period between the application of the final cover and establishment of vegetation, and maintenance procedures.

(f) Final cover installation plans showing the sequence of applying final cover. All areas filled with waste shall have a final cover designed to minimize infiltration of rainfall and subsequent generation of leachate, based on water balance calculations and leachate controls used.

1. The final cover shall be installed and tested in accordance with a construction quality assurance plan which meets the requirements of Rule 17-701.400(8), F.A.C.

17-701.600(4)(e)4. - 17-701.600(5)(f)1.

2. Final cover shall be placed over the entire surface of each completed solid waste disposal unit or units within 180 days after the final waste deposit, or within the time frame set forth in the approved closure plan. The final cover shall be vegetated with drought-resistant species to control erosion. The final cover is intended to be a moisture infiltration seal, therefore vegetational species planted shall be drought resistant and such that the roots will not penetrate the seal and thus provide a channel for moisture infiltration.

3. Top gradients of final cover on landfill areas shall be graded to maximize runoff and minimize erosion, considering total fill height and expected subsidence caused by decomposing waste, and shall be designed to prevent ponding or low spots.

4. The closure design plan shall describe provisions for cover material for the long-term care erosion control, filling areas of subsidence or other depressions, maintaining berms, and general maintenance of the facility, and specify the anticipated source and amount of material necessary for proper closure of the landfill.

(g) Final cover design.

1. Lined landfills and Class III landfills shall have a barrier soil layer 18 inches thick, with a maximum permeability of 1×10^{-5} cm/sec, emplaced in 6-inch thick lifts. A final, 18-inch thick layer of soil that will sustain vegetation to control erosion shall be placed on top of the barrier layer. Unlined Class I and Class II landfills shall have a final cover consisting of a final, 18-inch thick layer of soil that will sustain vegetation to control erosion, placed on top of the barrier layer, and a barrier soil layer 18 inches thick, emplaced in 6-inch thick lifts, with a permeability of 1×10^{-7} cm/sec or less.

2. Differing soil layer hydraulic properties may be used for the barrier soil layer which minimize infiltration to an equivalent degree as subparagraph 1. of this paragraph, provided that the thickness is at least 12 inches.

3. A geomembrane may be used as an alternative to the low-permeability soil barrier for a final cover, constructed to preclude rainfall infiltration into the landfill. A geomembrane used in final cover shall be a semi-crystalline thermoplastic at least 40 mils thick or a non-crystalline thermoplastic at least 30 mils thick with a maximum water vapor transmission rate of $2.4 \text{ g}/(\text{m}^2 \times \text{day})$, have chemical and physical resistance to materials it may come in contact with, and withstand exposure to the natural environmental stresses and forces throughout the installation, seaming process, and settlement of the waste during the closure and

17-701.600(5)(f)2. - 17-701.600(5)(g)3.

long-term care period. A protective soil layer at least 24 inches thick shall be put on top of the geomembrane. Material specifications, installation methods, and compaction specifications shall be adequate to protect the barrier layer from root penetration, resist erosion, and remain stable on the final design slopes of the landfill. This layer shall include top soil or soils that will sustain vegetative growth. In some cases, a drainage layer may be required between the cap (soil and geomembrane layer) and the top soil layer.

4. Nothing herein shall preclude the Department from requiring more stringent final or temporary cover designs in a permit or consent order if necessary to protect the public health or the environment because of the nature of wastes received or site specific geological or hydrogeological conditions, or if the landfill has not been adequately constructed, operated, maintained, or closed.

(h) Proposed method of stormwater control. Stormwater occurring on the landfill property and from areas adjacent to the landfill property shall be prevented from coming onto or into waste filled areas. The closure design plan shall demonstrate compliance with Chapter 17-25, F.A.C.

*Stormwater
control*

(i) Proposed method of access control. The closure design plan shall show how access to the closed landfill shall be restricted to prevent any future waste dumping or use of the facility by unauthorized persons. Restricted access shall remain in force until the landfill is stabilized and there is no evidence that facility property is being used as an unauthorized disposal site. If use of the property during the long-term care period is planned, access shall be restricted until landfill closing is completed and approved by the Department.

(j) A description of any proposed final use of the landfill property.

(6) Closure operation plan. The closure operation plan shall:

(a) Describe the actions which will be taken to close the landfill, such as placement of cover, grading, construction of berms, ditches, roads, retention-detention ponds, installation or closure of wells and boreholes, installation of fencing, seeding of vegetation, and protection of on-site utilities and easements;

(b) Provide a time schedule for completion of the closing and long-term care;

*time schedule
for closing and
long-term care.*

(c) Contain appropriate references to the closure design and other supporting documents;

(d) Describe the proposed method of demonstrating financial responsibility for the long term monitoring and maintenance; and

*financial
responsibility*

17-701.600(5)(g)3.(cont'd.) - 17-701.600(6)(d)

(e) Indicate any additional equipment and personnel needed to complete closure of the landfill.

(7) Temporary closure.

(a) Placement of final cover over a solid waste disposal unit may be delayed for a period of time specified in an approved closure plan for the following reasons:

1. For the purpose of promoting biological degradation of waste;

2. If additional solid waste will be deposited on the solid waste disposal unit within five years; or

3. If excavation of the waste is planned.

(b) Placement of final cover may be delayed only if the solid waste disposal unit is temporarily closed in accordance with an approved closure plan. Conditions of temporary closure shall include:

1. The solid waste disposal unit was constructed in compliance with its permit conditions, and has a liner and leachate control system;

2. A schedule for closure is shown in the closure plan application;

3. Final cover is installed on side slopes of each completed disposal unit which will not receive additional waste or which will not be mined, and all areas visible to the public are closed and landscaped;

4. Odors and vectors are controlled;

5. An intermediate cover is installed on the solid waste disposal unit;

6. The financial responsibility requirements of Rule 17-701.630, F.A.C., are met, and the closure cost estimate takes into account the costs of temporary closure as well as the costs of the final closure; and

7. The landfill owner or operator demonstrates that delaying placement of final cover will not cause or contribute to any significant increase in leachate escaping from the solid waste disposal unit into the environment.

(c) In addition, a solid waste disposal unit which will be mined in the future shall have a temporary final cover installed.

Specific Authority: 403.061, 403.704, F.S.

Law Implemented: 403.702, 403.704, 403.707, F.S.

History: New 1-6-93.

17-701.610 Closure Procedures.

(1) Closing inspections. The Department shall specify in the closure permit which particular closing steps or operations must be inspected and approved by the Department before proceeding with subsequent closure actions.

(2) Survey monuments. For landfills with a final elevation of less than 20 feet above the natural land surface, concrete monuments shall be installed to mark the

17-701.600(6)(e) - 17-701.610(2)

boundaries of the landfill property and other permanent markers shall be installed to outline the general waste filled areas. These markers shall be tied to one or more of the boundary markers by a survey performed by an engineer or a registered land surveyor. The location and elevation of all markers shall be shown on a site plan filed with the "Declaration to the Public" described in subsection (5) of this section.

(3) Final survey report. When landfill operations have been conducted which have raised the final elevations higher than 20 feet above the natural land surface, a final survey shall be performed after closure is complete by an engineer or a registered land surveyor to verify that final contours and elevations of the facility are in accordance with the plans as approved in the permit. Aerial mapping techniques which provide equivalent survey accuracy may be substituted for the survey. The survey or aerial mapping information shall be included in the report along with information reflecting the conditions of the landfill as constructed. Contours shall be shown at no greater than five-foot intervals. The landfill owner or operator shall submit this report to the Department in accordance with the closing schedule.

(4) Certification of closure construction completion. A certification of closure construction completion, signed, dated and sealed by the engineer of record, shall be provided to the Department upon completion of closure.

(5) Declaration to the public. After closing operations are inspected and approved by the Department, the landfill owner or operator shall file a declaration to the public in the deed records in the office of the county clerk of the county in which the landfill is located. The declaration shall include a legal description of the property on which the landfill is located and a site plan specifying the area actually filled with solid waste. The declaration shall also include a notice that any future owner or user of the site should consult with the Department prior to planning or initiating any activity involving the disturbance of the landfill cover, monitoring system or other control structures. A certified copy of the declaration shall be filed with the Department.

(6) Official date of closing. Upon receipt of the documents required in subsections (3), (4), and (5) of this section, the Department shall, within 30 days, acknowledge by letter to the facility operator that notice of termination of operations and closing of the facility has been received. If the entire landfill has been closed, the date of this letter shall be the official date of landfill

17-701.610(2)(cont'd.) - 17-701.610(6)

closing for the purpose of determining the long-term care period. If only a portion of the landfill has been closed, the long-term care period will begin upon the closing of the entire landfill, unless the portion which has been closed can be monitored and maintained separately from the rest of the landfill. The date of this letter shall be the official date of landfill closing for the purpose of determining the long-term care period.

(7) Use of closed landfill areas. Closed landfill areas, if disturbed, are a potential hazard to public health, ground water and the environment. The Department retains regulatory control over any activities which may affect the integrity of the environmental protection measures such as the landfill cover, drainage, liners, monitoring system, or leachate and stormwater controls. Consultation with the Department is required prior to conducting activities at the closed landfills.

Specific Authority: 403.704, F.S.
Law Implemented: 403.704, 403.707, F.S.
History: New 7-1-85, Formerly 17-7.074, Formerly 17-701.074, Amended 1-6-93.

17-701.620 Long-Term Care.

(1) Long-term care period. The owner or operator of any landfill which receives wastes after January 6, 1993, shall continue to monitor and maintain the facility in accordance with an approved closure plan for 30 years from the date of closing. Before the expiration of the long-term care monitoring and maintenance period, the Department may extend the time period if the closure design or closure operation plan is found to be ineffective.

(2) Reduced long-term care period. The owner or operator of a landfill may apply to the Department for a reduced long-term care schedule if reasonable assurance is provided to the Department that there is no threat to human health or the environment and if the landfill:

(a) Has been constructed and operated in accordance with approved standards, and has a leachate control system and a liner;

(b) Was closed with appropriate final cover, vegetative cover has been established, and a monitoring system has been installed;

(c) Has a 10-year history after closure of no violations of water quality standards or criteria detected in the monitoring system, and no increases over background water for any monitoring parameters which may be expected to result in violations of water quality standards or criteria; and

(d) Has had no detrimental erosion of cover, and subsidence of waste has ceased.

17-701.610(6)(cont'd.) - 17-701.620(2)(d)

modifying GWRP
deleting parameters

(3) Modified ground water monitoring plan. The owner or operator of a landfill may apply to the Department for a modification to their ground water monitoring plan to remove a parameter from the list specified in Rule 17-701.510(8), F.A.C., if the parameter has never been detected in the leachate or in any ground water well or surface water point during the active life of the landfill.

(4) Right of access. The landfill owner or operator shall possess or acquire a sufficient interest in, or a right to use, the property for which a permit is issued, including the access route onto the property to carry out the requirements of this rule. The permittee shall retain the right of entry to the landfill property for the long-term care period, after termination of solid waste operations, for inspection, monitoring and maintenance of the site.

(5) Successors in interest. Any person acquiring rights or ownership, possession or operation of a permitted landfill through lease or transfer of property shall be subject to all requirements of the permit for the facility and shall provide any required proof of financial responsibility to the Department in accordance with this rule. Any lease or transfer of property shall include specific conditions to delineate:

(a) The previous owner or operator is responsible for closure and shall maintain any required proof of financial responsibility until the person acquiring ownership, possession or operation of the landfill establishes the required proof of financial responsibility with the Department;

(b) Responsibility for the continuance of monitoring, maintenance, and correction of deficiencies or problems; and

(c) Mineral rights attached to the property and the rights to any recoverable materials that may be buried on the property or landfill gasses that may be produced. A Department permit shall be required if any on-site operations subsequent to closing of a landfill involve disturbing the landfill.

See District
Regulations

(6) Transfer of permit. Transfer of a landfill permit shall be in accordance with the provisions of Rule 17-4.120, F.A.C., and this rule.

(7) Replacement of monitoring devices. If a monitoring well or other device required by the monitoring plan is destroyed or fails to operate for any reason, the landfill owner or operator shall, immediately upon discovery, notify the Department in writing. All inoperative monitoring devices shall be replaced with functioning devices within 60

17-701.620(3) - 17-701.620(7)

days of the discovery of the malfunctioning unit unless the landfill owner or operator is notified otherwise in writing by the Department.

Specific Authority: 403.704, F.S.

Law Implemented: 403.704, 403.707, F.S.

History: New 7-1-85, Formerly 17-7.075, Formerly 17-701.075, Amended 1-6-93.

17-701.630 Financial Responsibility.

(1) Definitions. As used in this section:

(a) "Owner or operator" means, in addition to the usual meanings of the term, any owner of record of any interest in land whereon a landfill is or has been located and any person or corporation which owns a majority interest in any other corporation which is the owner or operator of a landfill.

(b) "Active life" means the operating life of the landfill as estimated in the construction permit or closure plan, but does not include the long-term care period.

(2) Applicability.

(a) A government-owned landfill closed on or before October 1, 1988, shall not be required to comply with this rule.

(b) As a condition for the issuance of a landfill construction permit, the owner or operator shall describe the financial mechanism to be used to demonstrate proof of financial responsibility to the Department. The financial mechanism shall be created, and alternate financial mechanisms shall be fully funded, at least 60 days prior to the acceptance of any solid waste at the facility. The financial mechanism shall either be:

1. A landfill management escrow account; or
2. An alternate financial mechanism pursuant to subsection (6) of this section.

(c) Owners or operators of existing landfills or landfills which have received a construction permit prior to November 28, 1989, shall submit proof of financial responsibility to the Department by October 1, 1990. Such proof shall be:

1. That a landfill management escrow account has been established and that such account and interest thereon is current as to the required level of funding pursuant to subsection (5) of this section; or,
2. Proof of the existence and current value of an alternate financial mechanism pursuant to subsection (6) of this section.

17-701.620(7)(cont'd.) - 17-701.630(2)(c)2.

(3) Cost estimates.

(a) For the purposes of determining the amount of proof of financial responsibility that is required in subsections (5) and (6) of this section, the owner or operator shall estimate the total cost of closure for the permitted portions of the landfill or for those portions of the landfill for which a construction permit is sought, for the time period in the landfill operation when the extent and manner of its operation make closing most expensive. The annual cost of long-term care shall be estimated and listed separately, and multiplied by 30 years. The owner or operator shall submit the estimates, together with all necessary justification, to the Department for approval along with the proof of financial responsibility. The costs shall be estimated by a professional engineer for a third party performing the work, on a per unit basis, with the source of estimates indicated.

(b) Closing costs shall be based on the nature and characteristics of the wastes disposed of at the site and shall include estimated costs of cover material, topsoil, seeding, fertilizing, mulching, labor, and any other costs of compliance with Rules 17-701.600 - .610, F.A.C.

(c) Long-term care costs shall include land surface care; gas monitoring; leachate pumping, transportation, monitoring and treatment; groundwater monitoring, collection and analysis; and any other costs of compliance with Rule 17-701.620, F.A.C.

(4) Annual cost adjustments.

(a) Every owner or operator of a landfill shall submit to the Department an annual cost adjustment statement, certified by a professional engineer. Closure and long-term care costs shall be listed separately.

(b) During the life of those portions of the landfill which have not been finally closed, the owner or operator shall revise the closure cost estimate for inflation and changes in the closure and long-term care plan. Such revisions shall be made annually in accordance with 40 CFR Part 264.142(a)(4)(b) or 40 CFR Part 264.144(a)(2)(b) and used as the basis for comparison against the balance in the landfill management escrow account or the value of an alternate funding mechanism.

(c) If the value of the alternate funding mechanism is less than the total amount of the current closure cost estimate, the owner or operator shall revise the funding mechanisms to reflect the new estimate within the time frames outlined in 40 CFR Part 264, Subpart H.

17-701.630(3) - 17-701.630(4)(c)

(d) If the value of the landfill management escrow account or alternate funding mechanism is greater than the total amount of the current closure cost estimate, the owner or operator may reduce the value of the account or funding mechanism to reflect the new estimate.

(5) Landfill management escrow account.

(a) The owner or operator of a landfill shall establish a fee, or a surcharge on existing fees, or other appropriate revenue-producing mechanism, to ensure the availability of financial resources for the proper closure and long-term care of the landfill.

(b) The revenue-producing mechanism shall produce revenue at a rate sufficient to generate funds to meet state landfill closure requirements.

(c) The revenue shall be deposited in an interest-bearing escrow account, the landfill management escrow account, to be held and administered by the owner or operator. The owner or operator shall file with the Department a signed duplicate original of the escrow account agreement and an annual audit of the account. The audit shall be conducted by an independent Certified Public Accountant and shall be filed no later than December 31 of each year. Counties using a Single Audit accounting system shall file this audit by March 31 of the following year. The audit shall consist of reporting the balance in the landfill management escrow account as of the end of each fiscal year and a list of all deposits and withdrawals made. The list shall include the date and the amount of each deposit and withdrawal.

(d) Payments into the landfill management escrow account shall be made by the owner or operator at least annually according to one of the following methods:

1. For a new landfill, the first payment must be made before the end of the first year after the initial receipt of solid waste into the landfill. A notice of such payment shall be submitted to the Department. The first payment shall be equal to the current closing cost estimate for the landfill divided by the number of years in the active life of the landfill. Subsequent payments must be made at least annually, over the term of the active life of the landfill, on the anniversary date of the first payment. The calculations for such annual payment shall be as follows: $\text{payment} = (\text{CE} - \text{CV}) / Y$, where CE is the current calculated closure cost estimate, CV is the current value of the escrow account, and Y is the number of remaining years in the active life of the landfill.

17-701.630(4)(d) - 17-701.630(5)(d)1.

2. For government-owned landfills, the owner or operator shall deposit into the escrow account, at the time of closing and each year thereafter, sufficient funds to cover the following year's long-term care costs. In addition, the owner or operator must document specifically how it intends to finance the long-term care of the landfill as part of its closure plan.

3. For landfills not owned by a governmental agency, the long-term care costs shall be included in the closing cost estimates as specified in subparagraph 1. above; long-term care costs must be fully funded when the landfill closes.

4. For an existing government-owned landfill scheduled to close on or before October 1, 1995, no escrow account funding is required for costs associated with the closing of the landfill. Proof of financial responsibility for closing costs shall consist of specific documentation of how the owner or operator intends to finance the closing of the landfill. Escrow funding for long-term care shall be provided.

5. The owner or operator may accelerate payments into the landfill management escrow account or may deposit the full amount of the current closure cost estimate at the time that the account is established.

(e) The owner or operator may make expenditures from the account and its accumulated interest only for the purpose of landfill closure and long-term care and, if such expenditures do not deplete the fund to the detriment of eventual closure and long-term care as described under the certification procedure in subsection (4) of this section, for planning and construction of resource recovery or landfill facilities. If the owner or operator does not operate a landfill, any funds remaining in the account after paying for proper and complete closure and long-term care, as determined by the Department, shall be deposited by the owner or operator into the general fund of the local government of jurisdiction.

(f) The revenue generated under this subsection and any accumulated interest thereon may be applied to the payment of, or pledged as security for, the payment of revenue bonds issued in whole or in part for the purpose of complying with state landfill closure and long-term care requirements. Such application or pledge may be made directly in the proceedings authorizing such bonds or in an agreement with an insurer of bonds to assure such insurer of additional security therefore.

~~(6)~~ Alternate proof of financial responsibility.

(a) An owner or operator may establish proof of financial responsibility with the Department in lieu of, or in combination with, the requirements of subsection (5) of

17-701.630(5)(d)2. - 17-701.630(6)(a)

this section. Such proof may include surety bonds, certificates of deposit, securities, letters of credit, trust fund agreements, closure insurance or financial tests and corporate guarantees showing that the owner or operator has sufficient financial resources to cover, at a minimum, the costs of complying with all state landfill closure and long-term care requirements. If such proof of financial responsibility is surety bonds, letters of credit, trust fund agreements, closure insurance or financial tests and corporate guarantees, such proof shall be submitted on forms provided by the Department in accordance with the requirements of paragraphs (b) and (c) of this subsection. If proof of financial responsibility is securities or certificates of deposit, such financial documents shall be submitted directly to the Department. The owner or operator shall estimate such costs pursuant to subsection (3) of this section.

(b) 40 CFR Part 264 Subpart H which contains EPA's rules on financial requirements for owners and operators of hazardous waste facilities are hereby adopted as financial requirements for purposes of this section incorporated by reference as those rules appear in 40 CFR 264, revised as of July 1, 1988, except:

1. The following sections of 40 CFR Part 264 Subpart H are specifically not adopted as part of this rule:

a. 264.140(a); 264.140(b); 264.141(a); 264.141(e); 264.147; 264.149; 264.150; and 264.151.

b. All references to 40 CFR Part 265.

c. All references to sections or subparts of 40 CFR 264 not contained in Subpart H.

d. All references to EPA Regions.

e. All references to RCRA, or Section 3008 of RCRA.

2. References in 40 CFR 264 Subpart H to the United States Environmental Protection Agency (EPA) shall mean the State of Florida Department of Environmental Regulation; to Regional Administrator shall mean the Secretary of the Department; to permits shall mean solid waste management permits; to Post-Closure Care/Post-Closure Cost Estimate shall mean Long-Term Care/Long-Term Care Cost Estimate; to EPA identification number shall mean the Department identification number; to hazardous waste shall mean solid waste; and to hazardous waste treatment, storage or disposal facilities shall mean landfills.

(c) Government-owned facilities using a Single Audit accounting system and providing proof of financial responsibility using a financial test, must send updated information outlined in 40 CFR 264.143(f)(5) and 264.145(f)(5) to the Department within 180 days after the close of each succeeding fiscal year.

17-701.630(6)(a)(cont'd.) - 17-701.630(6)(c)

(d) Form 17-701.900(5) shall be used when submitting proof of financial responsibility under this section.
Specific Authority: 403.704, F.S.
Law Implemented: 403.704, 403.707, F.S.
History: New 7-1/85; Formerly 17-7.076; Amended 11-28-89; Formerly 17-701.076; Amended 1-6-93.

17-701.700 Materials Recovery Facilities.

(1) Applicability. No person shall construct or operate a materials recovery facility without a permit issued by the Department.

(2) Engineering report. A permit application for a materials recovery facility shall include the information required in Rule 17-701.320, F.A.C., and an engineering report that includes:

(a) A description of the solid waste that is proposed to be collected, stored, processed or disposed of by the facility, a projection of those waste types and quantities expected in future years, and the assumptions used to make the projections;

(b) A description of the operation and functions of all processing equipment that will be used, with design criteria and expected performance. The description shall show the flow of solid waste and associated operations in detail, and shall include:

1. Regular facility operations as they are expected to occur;
2. Procedures for start up operations, and scheduled and unscheduled shut down operations; and
3. Potential safety hazards and control methods, including fire detection and control;

(c) A description of loading, unloading, and processing areas. If wastes which are reasonably expected to produce leachate are being processed, the facility shall be designed with a leachate control system to prevent discharge of leachate and mixing of leachate with stormwater;

(d) Identification and capacity of temporary on-site storage areas for recyclable materials, non-processable wastes, unauthorized wastes, and residues;

(e) Provisions for solid waste and leachate containment;

(f) Identification of potential ground water and surface water contamination; and

(g) A plan for disposal of unmarketable recyclable materials and residue, and for waste handling capability in the event of breakdowns in the operations or equipment. Wastes shall be handled on a first-in, first-out basis. Stored putrescible wastes shall not be allowed to remain unprocessed for more than 48 hours unless provisions are made to control vectors and odors.

17-701.630(6)(d) - 17-701.700(2)(g)

(3) Operational requirements. A permit application for a materials recovery facility shall include the following operational requirements:

(a) An operation and maintenance manual describing the facility operations, the persons responsible for the operations, and types of equipment that will be used. All activities at the facility shall be performed in accordance with the manual and plans for the facility. Manuals and plans shall be updated as operations change but no less frequently than upon renewal of the operation permit;

(b) A plan to screen the wastes received by the facility, that specifies inspection procedures and procedures to handle unauthorized wastes;

(c) A contingency plan to cover operations interruptions and emergencies such as fires, explosions, or natural disasters; and

(d) A closure plan that identifies the steps needed to close the facility. The closure plan shall provide for the following:

1. Owner or operator notification to the Department in writing 180 days before the date the facility is expected to close. No waste shall be received by the facility after the expected closing date;

2. Within 30 days after receiving the final solid waste shipment, the owner or operator shall remove or otherwise dispose of all solid waste or residue in accordance with the approved closure plan; and

3. Closure must be completed within 180 days after receiving the final waste quantity. Closure will include removal of all recovered materials from the site. When closure is completed, the owner or operator shall certify in writing to the Department that closure is complete. The Department will make an inspection within 30 days to verify the closure and advise the owner or operator of the closure status.

(4) Financial responsibility. The owner or operator of a materials recovery facility shall post a performance bond payable to the Department to cover the cost of properly closing the facility, if one or more of the following conditions exist:

(a) Where the owner of the land or materials recovery facility and the operator of the facility are not the same person; or

(b) If the operator of the facility could stockpile waste that may create an environmental threat if the facility closes without properly disposing of the waste.

17-701.700(3) - 17-701.700(4)(b)

(5) Stormwater, Stormwater shall be controlled in accordance with Chapter 17-25, F.A.C., and any water management district rules. A copy of any permit for stormwater control, or documentation that no permit is required, shall be submitted to the Department before the facility receives waste (for disposal).
Specific Authority: 403.061, 403.704, F.S.
Law Implemented: 403.702, 403.704, 403.707, F.S.
History: New 1-6-93.

17-701.720 Industrial Solid Waste Disposal

(1) Applicability. After January 6, 1993 except as provided below, and subject to the provisions of Rule 17-701.220, F.A.C., solid waste disposal units which accept primarily industrial wastes other than construction and demolition debris, clean debris, or those materials specified as acceptable in Class III landfills in Rule 17-701.340(3)(d), F.A.C., shall meet the following requirements:

(a) Solid waste disposal units constructed after January 6, 1995 or for which an application for a permit or site certification was not received and deemed complete by the Department before January 6, 1995 shall meet the same requirements of this chapter as apply to Class I landfills. This requirement also applies to lateral expansions of solid waste disposal units.

(b) All other solid waste disposal units which receive waste after January 6, 1995 shall comply with the same operational and closure requirements of Rules 17-701.500, 17-701.510, 17-701.600, 17-701.610, 17-701.620, and 17-701.630, F.A.C., as apply to Class I landfills.

(2) Alternate requirements for specific facilities. The owner or operator of an industrial waste disposal facility may request approval of alternate procedures and requirements in accordance with Rule 17-701.310, F.A.C.

(3) Alternate requirements for types of industrial operations. A person or organization representing a specific type of industrial operation may request general approval for all such industrial operations. Such request for a specific type of industrial operation shall be submitted by July 6, 1994 and shall be accompanied by an analysis of the waste stream and operational procedures intended to demonstrate that the standards for Class I landfills are inappropriate for that waste stream. This deadline shall be tolled during the time that any required, complete Quality Assurance Plan is being reviewed and acted on by the Department. The Department shall offer assistance to the waste generators in determining what types of information may be submitted. If the Department determines

17-701.700(5) - 17-701.720(3)

that such submittal, along with any additional information supplied, includes the information specified in subsection (4) of this section, then the provisions of subsection (1) of this section shall not apply to that type of industrial operation. Instead, the Department shall, after an evaluation of the submittals and any additional information submitted, initiate rulemaking to set standards for the construction, operation and closure of disposal facilities at that type of industrial operation, including lateral expansions of existing facilities.

(4) Guidelines. The following guidelines are offered for those persons or organizations requesting such alternate requirements for industrial waste disposal facilities or types of industrial operations.

(a) The request should include a detailed description of those wastes which are typically disposed of. This description should include:

1. An analysis of the chemical, biological and physical properties of the waste;
2. An analysis of any predicted movements of such waste in ground water;
3. An analysis of the likelihood of such wastes causing violations of ground water quality standards or criteria if released into the environment, taking into account any applicable zones of discharge; and
4. An analysis of the likelihood of such wastes releasing methane or other gases into the atmosphere.

(b) The request should include a detailed description of the operational and management practices at the facility. The description should include:

1. A demonstration that the facility operator follows appropriate procedures to assure that only the described industrial wastes are disposed of in the industrial waste disposal unit; and
2. A demonstration that the facility will have equipment and features necessary to comply with Rule 17-701.500(11), F.A.C.

(c) If the person or organization is requesting that less stringent liner requirements apply, the request should include one or more of the following:

1. A demonstration that leachate from the waste, if released into the environment, will pose little or no threat to the public or the environment, and will not violate ground water quality standards and criteria, taking into account any applicable zones of discharge;
2. An analysis of the likelihood and extent that such leachate will be released into the environment; and
3. A demonstration that leachate from the waste will not have an adverse effect on the proposed liner system, if any.

17-701.720(3) (cont'd.) - 17-701.720(4) (c)3.

(d) If a person or organization is requesting that less stringent gas control systems apply, the request should include a demonstration that either:

1. The waste is not expected to produce any significant amounts of gases; or
2. The less stringent gas control system requested shall meet the requirements of Rule 17-701.400(10)(a)1., F.A.C.

(e) If a person or organization is requesting that less stringent ground water monitoring requirements apply, the request should include an analysis of the leachate produced by the waste indicating those constituents which may enter the ground water in the case of leakage.

(f) If a person or organization is requesting that less stringent initial or intermediate cover requirements apply, the request should include a demonstration that the less stringent requirements will provide an equal degree of protection from odors, fires, vectors, and blowing dust.

(g) If a person or organization is requesting that less stringent closure requirements apply, the request should include a demonstration that:

1. Infiltration of rainfall after closure will be minimized; or
2. Leachate generated after closure will not cause a violation of water quality standards during the long-term care period.

(5) This section is not intended to limit the Department's authority to require permits and permit conditions necessary to protect the public health and the environment. Between January 6, 1993 and January 6, 1995 and during any rulemaking procedures that the Department may undertake pursuant to subsection (3) of this section, the Department will continue to evaluate any applications for industrial waste disposal units on a case by case basis.
Specific Authority: 403.061, 403.704, F.S.
Law Implemented: 403.702, 403.704, 403.707, F.S.
History: New 1-6-93.

17-701.730 Construction and Demolition Debris Disposal.

(1) Clean debris. Clean debris may be used as fill material in any area, including waters of the State, subject to receipt of a dredge and fill permit from the Department where applicable. Clean debris used as fill material is not solid waste, and such use does not require a solid waste permit under this rule. Clean debris that is not used as fill material shall be disposed of as construction and demolition debris.

17-701.720(4)(d) - 17-701.730(1)

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(2) Landfill disposal. Construction and demolition debris may be disposed of in a permitted landfill. However, pursuant to Section 403.706(2), F.S., each county must initiate by July 1, 1989, a program to develop segregated disposal areas for construction and demolition debris. This program shall be designed to assure that all construction and demolition debris is disposed of in segregated areas after August 1, 1990. The cover requirements for a segregated construction and demolition debris disposal area within a permitted landfill shall be those in Rule 17-701.803(9), F.A.C.

(3) On-site disposal. Construction and demolition debris which is disposed of on the property where it is generated, or on property which is adjacent or contiguous to and under common ownership and control as that property where the waste is generated, is exempt from the landfill permitting requirements of Rule 17-701.330, F.A.C. However, such disposal is subject to the prohibitions of Rule 17-701.300, F.A.C. Such disposal areas must also be closed, graded and vegetated as specified in Rule 17-701.803(9), F.A.C.

(4) Off-site disposal. Construction and demolition debris may be disposed of off-site at a facility operating under a general permit pursuant to Rules 17-4, Part III and 17-701.803, F.A.C., or at a solid waste facility permitted under Rule 17-701.330, F.A.C. Such a facility operating under a general permit shall accept only construction and demolition debris for disposal.

(5) Recycling and burning. Nothing in this rule shall prevent the burning or recycling of construction and demolition debris in accordance with Department rules.

(6) Disposal restrictions. Construction and demolition debris may be disposed of only in accordance with one of the methods authorized above. In addition, disposal areas shall be operated so that adverse environmental and public health impacts, such as blowing litter, odors, and vectors, are minimized.

(7) Asbestos waste disposal. Asbestos-containing waste materials regulated pursuant to 40 CFR Part 61, Subpart M, shall not be disposed of in a construction and demolition debris disposal area.

Specific Authority: 403.061, 403.704, 403.707, F.S.

Law Implemented: 403.706, 403.707, F.S.

History: New 8-2-89; Formerly 17-701.061; Amended 1-6-93.

17-701.730(2) - 17-701.730(History)

17-701.801 General Permit for Solid Waste Transfer Station.

(1) General permit. A general permit is hereby granted to any person for the construction and operation of a solid waste transfer station that has been designed or will be operated in accordance with the standards and criteria set forth in Rules 17-4.540 and 17-701.300, F.A.C., and this section.

(2) Notification. Any person wishing to operate a transfer station pursuant to this section shall notify the Department on Form 17-701.900(4) and provide the following:

(a) Regional map. The regional map shall delineate the service area of the proposed transfer station.

(b) Site plan. The site plan shall include:

1. Site conditions and projected use including all site structures, buildings, fences, gates, entrances and exits, parking areas, on-site roadways, and signs;
2. Property boundaries, access roads, surface water bodies, and the location of 100-year flood plain boundaries;
3. Proposed structures and areas designated for unloading, sorting, storage, and loading, including dimensions, elevations, and floor plans of these structures and areas, and the general process flow; and
4. Adjacent properties including the location of public and private water supplies on these properties.

(c) Engineering report. The engineering report shall include:

1. A description of the general operating plan for the proposed facility including the origin, composition, and expected weight or volume of all solid waste to be accepted at the facility, the maximum time waste will be stored, where all wastes will be disposed, the capacity of the facility, the operating hours of the facility, and the expected life of the facility;
2. A description of all machinery and equipment to be used, including the design capacity;
3. A transfer plan specifying the transfer route, the number and type of transfer vehicles to be used, and how often solid waste will be transferred to the disposal site;
4. A description of the facility's drainage system and water supply system;
5. A plan for hiring and training equipment operators and other personnel concerning the operation of the facility; and
6. A contingency plan describing alternate solid waste handling procedures for periods of inoperation or delays in transporting solid waste.

(3) Design requirements. Minimum design requirements for transfer stations are as follows:

17-701.801(1) - 17-701.801(3)

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(a) On-site roads and unloading areas shall be designed for efficient movement and unloading of vehicles.

(b) Tipping, processing, sorting, storage and compaction areas that are in an enclosed building or covered area shall have ventilation systems. The areas that are not enclosed shall be equipped with litter control devices and visual screening.

(c) The facility shall be designed with a leachate control system to prevent discharge of leachate and mixing of leachate with stormwater.

(d) Provisions shall be made for weighing or measuring all incoming solid waste and recovered materials. Storage areas shall be designed to hold the expected volume of materials until they are transferred for disposal or recycling.

(e) Where the general public may use the transfer facility, safety procedures shall be established for private vehicles.

(4) Operational requirements.

(a) Prohibited wastes shall not be accepted at a transfer station. Handling of unauthorized wastes shall be addressed in the contingency plan.

(b) An attendant shall be on duty whenever the facility is operating. Operating hours shall be posted, and fencing, gates, or other means shall be used to prevent unauthorized access when the station is closed.

(c) Litter, insects, odors and vectors shall be controlled to prevent sanitary nuisance and unsightly appearance.

(d) Wastes shall be handled on a first-in, first-out basis to the extent practicable. All waste storage areas shall be cleaned at the end of each day's operations or during continuous operation, as necessary, to prevent odor or vector problems. All floors shall be free of standing liquids. Drainage from cleaning areas shall be discharged to sanitary sewers or the equivalent.

(e) Adequate fire protection must be available at all times.

(f) Recovered materials shall be clearly identified and stored in a safe, sanitary manner. A record of the type and quantity of recovered materials shall be maintained and reported as part of the county's recycling program.

(g) Operational records shall be maintained to include a daily log of the quantity of solid waste received and transported and the origin of the waste. Such records shall be compiled on a monthly basis and shall be available for inspection by the Department. Reports shall be retained at the station for three years.

17-701.801(3)1. - 17-701.801(4)7.

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(5) Certification of construction completion. Within 30 days of completion of construction, the engineer of record shall certify to the Department that the permitted construction is complete and that it was done in accordance with the plans submitted to the Department except where minor deviation was necessary. All deviations shall be described in detail and the reasons therefore enumerated.

(6) Stormwater. Stormwater shall be controlled in accordance with Chapter 17-25, F.A.C., and any water management district rules. A copy of any permit for stormwater control, or documentation that no permit is required, shall be submitted to the Department before the facility receives waste for disposal.

(7) Any person wishing to construct or operate a transfer station pursuant to this section shall publish, in a newspaper of general circulation in the area affected, notice of application for a general permit. Such public notice of application shall be published within 14 days after the applicant notifies the Department. Within 21 days after publication of notice, any person whose substantial interests are affected may request a hearing in accordance with Section 120.57, F.S. No person shall begin work pursuant to a general permit until after the time for requesting a hearing has passed or, if a hearing is requested, until final agency action is taken authorizing construction.

Specific Authority: 403.814(1), F.S.

Law Implemented: 403.061, 403.087, 403.088, 403.702-403.73, 403.814, F.S.

History: New 7-8-82; Previously numbered as 17-4.61;

Formerly 17-4.610; Formerly 17-7.801; Amended 1-6-93.

17-701.802 General Permit for Land Application of Grade II Domestic Wastewater Treatment Sludge.

(1) As a result of the potential harm to human health or the environment resulting from sludge disposal activities, it is important that public notice be given before a general permit for such activities is utilized. Therefore, a general permit is hereby granted to any person for land application of Grade II domestic wastewater treatment sludge; provided:

(a) The person intending to apply the sludge to the land submits a completed General Permit Application for Grade II Sludges, as specified in Fla. Admin. Code Rule 17-701.060. - transfer to

(b) The permit applicant, within 14 days of notice to the department, has published in a newspaper of general circulation in the area affected, a notice of the intended land application of Grade II sludge. The notice shall include the name of the applicant and a brief description of the proposed activity and location.

17-701.801(5) - 17-701.802(1)(b)

(c) The sludge is land applied pursuant to the requirements of Fla. Admin. Code Rule 17-701.540(5).

(2) The general permit shall be subject to the general conditions of Fla. Admin. Code Rule 17-4.540.

Specific Authority: 403.814, F.S.

Law Implemented: 403.061, 403.087, 403.702, through 403.715, 403.814, F.S.

History: New 6-16-84. Previously numbered as 17-4.64.

Formerly 17-4.640, Formerly 17-7.802.

17-701.803 General Permit for Off-site Disposal of Construction and Demolition Debris.

(1) Notification. The owner or operator of the construction and demolition debris disposal facility shall notify the Department in writing on Form 17-701.900(3) of the intent to use this general permit. Owners or operators of solid waste management facilities which have a permit under Chapter 17-701, F.A.C., to receive construction and demolition debris are exempt from this requirement. The notification shall be signed and sealed by a professional engineer and shall include:

(a) A site plan, of a scale not greater than 200 feet to the inch, which shows the project location and identifies the proposed disposal areas, total acreage of the site and of the proposed disposal area, and any other relevant features such as water bodies, wetlands, or potable water wells on or within 500 feet of the site;

(b) A geotechnical investigation which meets the criteria of Rule 17-701.420, F.A.C.

(c) A general description of the facility operations, including equipment and personnel planned for the operation and closure of the facility;

(d) A boundary survey and legal description of the property from the county tax assessor's office;

(e) The planned active life of the facility, and the design height of the facility;

(f) Closure plans and cross section details of the final cover;

(g) The mailing address and phone number of the owner and operator; and

(h) Documentation that the applicant either owns the land or has legal authorization from the land owner to use the land for a disposal facility.

(2) Certification. Within 30 days of completion of construction, the engineer of record shall certify to the Department that the permitted construction is complete and that it was done in accordance with the plans submitted to the Department except where minor deviation was necessary. All deviations shall be described in detail and the reasons therefore enumerated.

17-701.802(1)(c) - 17-701.803(2)

(3) Other requirements. The requirements of Rules 17-701.330 through 17-701.630, F.A.C., do not apply to construction and demolition debris disposal facilities, provided that none of the prohibitions contained in Rule 17-701.300, F.A.C., or the water quality standards contained in Chapters 17-3 and 17-302, F.A.C., shall be violated.

(4) Stormwater. Stormwater shall be controlled in accordance with Chapter 17-25, F.A.C., and any water management district rules. A copy of any permit for stormwater control, or documentation that no permit is required, shall be submitted to the Department before the facility receives waste for disposal. *Wash water*

(5) Temporary storage. The disposal facility shall have equipment for temporary storage and transport for solid waste, other than construction and demolition debris, to an authorized disposal facility. Such solid waste which is accepted by the facility shall be segregated and disposed of in accordance with Department rules.

(6) Compaction. Construction and demolition debris shall be compacted and sloped as necessary to assure that the requirements of subsection (9) of this section can be met.

(7) Access. Access to the disposal facility shall be controlled during the active life of the facility by fencing or other effective barriers to prevent disposal of solid waste other than construction and demolition debris.

(8) Inspections. Operation of a facility under a general permit constitutes consent for Department personnel to inspect the site during normal business hours for compliance with Department rules.

(9) Closure. Final cover and seeding or planting of vegetative cover shall be placed on each disposal unit within 180 days after final receipt of wastes. Final cover shall consist of a 24-inch-thick soil layer, the upper six inches of which shall be capable of supporting vegetation and shall be graded to eliminate ponding, promote drainage, and minimize erosion. The side slopes of all above-grade disposal areas shall be no greater than three feet horizontal to one foot vertical rise. *3:1 Slopes*

(10) Notification of closure. The owner or operator shall notify the Department within 30 days after closing, covering, and seeding the facility as required in subsection (9) of this section.

(11) Recycling. The owner or operator of the facility may recover materials from the construction and demolition debris waste stream for purposes of recycling, provided that such recovery does not result in a violation of this section. In such a case, a separate solid waste permit is not required.

17-701.803(3) - 17-701.803(11)

(12) Incineration. A facility which employs an air curtain incinerator and which also stores or disposes of construction and demolition debris at the site shall meet the permitting requirements of Rule 17-256.500, F.A.C., as well as this section. Specific Authority: 403.061, 403.704, 403.707, 403.814, F.S.
Law Implemented: 403.707, 403.814, F.S.
History: New 8-2-89; Amended 1-6-93.

17-701.900 Forms.

The forms used by the Department in the solid waste management program are adopted and incorporated by reference in this section. The form is listed by rule number, which is also the form number, and with the subject, title and effective date. Copies of forms may be obtained from a local District Office or by writing to the Florida Department of Environmental Regulation, DER Library, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

(1) Application to Construct, Operate, Modify, or Close a Solid Waste Management Facility, effective January 6, 1993.

(2) Certification of Construction Completion of a Solid Waste Management Facility, effective January 6, 1993.

(3) Notification of Intent to Use a General Permit for a Construction and Demolition Debris Disposal Facility, effective January 6, 1993.

(4) Notification of Intent to Use a General Permit to Construct and Operate a Transfer Station, effective January 6, 1993.

(5) Financial mechanisms for solid waste management facilities requiring closure and/or long-term care, effective October 1, 1989:

(a) Solid Waste Facility Irrevocable Letter of Credit.

(b) Solid Waste Facility Financial Guarantee Bond.

(c) Solid Waste Facility Performance Bond.

(d) Solid Waste Facility Closure/Long-Term Care Insurance Certificate.

(e) Solid Waste Facility Financial Test.

(f) Solid Waste Facility Corporate Guarantee.

(g) Solid Waste Facility Trust Fund Agreement to Demonstrate Closure and/or Long-Term Care Financial Assurance.

(h) Solid Waste Facility Standby Trust Fund Agreement.
Specific Authority: 120.53(1), 403.061, 403.704, F.S.
Law Implemented: 120.53(1), 403.707, F.S.
History: New 8-2-89; Amended 1-6-93.

17-701.803(12) - 17-701.900(History)