WEST VIRGINIA
SECRETARY OF STATE
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ADMINISTRATIVE LAW DIVISION

Form #4

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OFFICE OF WEST VIRGINIA SECRETARY OF STATE

NOTICE OF RULE MODIFICATION OF A PROPOSED RULE

AGENCY: *Division of Environmental Protection Waste Management/Water Resources* TITLE NUMBER: *47*

CITE AUTHORITY *WV Code 22-1-3, 22-1-3a., 22-15-5.(a)*

AMENDMENT TO AN EXISTING RULE: YES X NO ___

IF YES, SERIES NUMBER OF RULE BEING AMENDED: *38*

TITLE OF RULE BEING AMENDED: *"Solid Waste Management Regulations"*

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: ___

TITLE OF RULE BEING PROPOSED: ___

THE ABOVE PROPOSED LEGISLATIVE RULE, FOLLOWING REVIEW BY THE LEGISLATIVE RULE MAKING REVIEW COMMITTEE IS HEREBY MODIFIED AS A RESULT OF REVIEW AND COMMENT BY THE LEGISLATIVE RULE-MAKING REVIEW COMMITTEE. THE ATTACHED MODIFICATIONS ARE FILED WITH THE SECRETARY OF STATE.

Authorized Signature

30.60

requirements in section 5, except that such requirements, as they apply to sources solely subject to this section 40., may be modified by the Director upon petition by the owner or operator. Any such modified requirements shall be embodied in the facility's control plan (RACM, RACT or alternative plan) and reflected in the associated consent order or permit issued pursuant to 45CSR13 or 45CSR30.' "

(k) The legislative rules filed in the state register on the twenty-seventh day of July, one thousand nine hundred ninety-five, authorized under the authority of section five, article twelve, chapter twenty-two of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the seventeenth day of January, one thousand nine hundred ninety-six, relating to the division of environmental protection (monitoring well design standards, 47CSR60), are authorized.

(l) The legislative rules filed in the state register on the thirty-first day of July, one thousand nine hundred ninety-five, authorized under the authority of section five, article fifteen, chapter twenty-two of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-fourth day of January, one thousand nine hundred ninety-six, relating to the division of environmental protection (solid waste management, 47CSR38), are authorized with the following amendments:

"On page 37, subdivision 3.8.4, after the words 'from the uppermost' by striking the word 'significant.'

On page 142, by striking the existing subdivision 4.11.2.c.A and inserting in lieu thereof the following:

'**4.11.2.c.A**

The monitoring frequency for all constituents listed in Appendix I of this rule, must be at least twice a year during the active life of the facility, including closure and the post-closure periods. The director may require more fre-

quent monitoring on a site-specific basis by considering aquifer flow rate and existing quality of the groundwater.'

On page 148, by striking the existing subdivision 4.11.3.i.A. and inserting in lieu thereof the following:

'**4.11.3.i.A.**

The director may consider an alternative groundwater protection standard in consultation with the environmental quality board pursuant to 47CSR57 for constituents for which water quality standards have not been established.'

On page 151, subdivision 4.11.5., by following the words 'any applicable groundwater quality protection standards' by inserting the words 'and/or background groundwater quality, pursuant to the requirements of the Groundwater Protection Act, WVC §22-12-1 et seq.'

On page 152, subdivision 4.11.6.b.A., by following the words 'Be protective of human health and the environment' inserting the words 'and maintain existing groundwater quality, pursuant to the requirements of the Groundwater Protection Act, WVC §22-12-1 et seq.'

On page 154, subdivision 4.11.6.d.B.(f), by striking the words 'Resource value of the aquifer' and inserting in lieu thereof the words 'The hydrogeologic characteristics of the facility and the surrounding land,'

On page 154, subdivision 4.11.6.d.B(f).(e) by striking out the words "The hydrogeologic characteristics of the facility and surrounding land;

And, by renumbering and relettering the remaining subdivisions of the rule.

On page 156, subdivision 4.11.7.a.A., by following the words 'Demonstrate compliance with' inserting the words 'the Groundwater Protection Act, WVC §22-12-1 et seq., and/or the"

And,

On page 173, subdivision 5.4.3, by adding the following sentence to the end of the subdivision: 'A class D facil-

ity other than a class D-1 solid waste facility shall not exceed two (2) acres in size.' "

§64-3-2. Environmental boards.

(a) The legislative rules filed by the environmental quality board in the state register on the thirty-first day of July, one thousand nine hundred ninety-five, under the authority of section four, article three, chapter twenty-two-b of this code, modified by the environmental quality board to meet the objections of the legislative rule-making review committee and refiled in the state register on the nineteenth day of January, one thousand nine hundred ninety-six, relating to the environmental quality board (requirements governing water quality standards, 46CSR1), are authorized with the following amendments:

"On page one, section two, by deleting all of subsection 2.1;

On page one by renumbering the following subsection:

On page two, after subsection 2.1, by adding a new subsection 2.2 to read as follows:

'2.2. 'Cumulative' means a pollutant which increases in concentration in an organism by successive additions at different times or in different ways';

And,

On page eight, section five, after the words 'No mixing zones for human health criteria shall be' by striking out the remainder of subdivision c. and inserting in lieu thereof the following:

'established on a stream which has a seven (7) day, ten (10) year return frequency of 5 cfs or less.' "

(b) The legislative rules filed in the state register on the twenty-sixth day of July, one thousand nine hundred ninety-five, authorized under the authority of section six, article three, chapter twenty-two-c of this code, modified by the solid waste management board to meet the objections of the legislative rule-making review committee and

TITLE 47
LEGISLATIVE RULES
BUREAU OF ENVIRONMENT
DIVISION OF ENVIRONMENTAL PROTECTION

SERIES 38
SOLID WASTE MANAGEMENT RULE

TITLE 47
LEGISLATIVE RULES
~~DEPARTMENT OF NATURAL RESOURCES~~
BUREAU OF ENVIRONMENT
DIVISION OF ENVIRONMENTAL PROTECTION

SERIES 38
SOLID WASTE MANAGEMENT ~~REGULATIONS~~ RULE

§47-38-1. General.

1.1. Scope and Purpose. -- This legislative rule establishes requirements for the siting, (including location standards), ~~bonding~~, financial assurance, installation, establishment, construction, design, groundwater monitoring, modification, operation, permitting, ~~and~~ ~~abandonment~~, closure and post-closure care of any solid waste facility that processes, recycles, composts, transfers or disposes of solid waste pursuant to W. Va. Code §~~20-5F~~ 22-15. This rule applies to any person who owns or operates a solid waste facility or who is responsible for the processing, composting, recycling, transfer or disposal of solid waste, except for those recycling facilities exempted from permitting requirements as authorized by W. Va. Code §20-11-12.

1.1.1. Applicability.

1.1.1.a. Permittees or applicants of existing solid waste landfills (SWLFs), or portions thereof, that stopped receiving waste before the effective date of this rule must close their SWLF in accordance with the terms and conditions of their solid waste permit, order, and/or the laws, rules and regulations in place on the effective date of this rule, unless permit requirements are otherwise required by the director.

1.1.1.b. Permittees of existing SWLFs, or portions thereof, that initiate, or continue receiving waste after the effective date of this rule must comply with the terms and conditions of their existing solid waste permit, order, and additionally the laws, rules and regulations in place on the effective date of this rule, unless said permit is modified by the director to include the requirements of this rule, or unless permit requirements are otherwise modified by the director.

1.1.1.c. Applicants for new SWLFs, and lateral expansions of existing SWLFs that are issued permits after the effective date of this rule must comply with the terms and conditions of that new solid waste permit, and/or the laws, rules and regulations, or order, in place on the effective date of this rule, unless otherwise required by the director.

1.1.1.d. The applicability requirements of this section do not apply to existing solid waste nondisposal solid waste facilities. These facilities must continue to comply with their existing permit and this rule, §§22-15, 22-12 and 22-11 as applicable, until such time as the permit is subject to renewal, modification or other similar permitting function. New "nondisposal" facility applicants must apply for permits as required by, and in compliance with, this rule.

facility applicants must apply for permits as required by, and in compliance with, this rule.

1.2. **Authority.** -- W. Va. Code §§~~20-5F-4~~ 22-15-5, ~~20-5F-5~~ 22-15-10, ~~20-5F-5b~~ 22-15-12, ~~20-5F-5c~~ 22-15-13, and ~~20-5F-5d~~ 22-15-14.

1.3. **Filing Date.** --

1.4. **Effective Date.** --

1.5. ~~Repeal~~ Amendment **of Former Rule.** -- These legislative rule ~~repeals and replaces~~ amends 47 ~~C.S.R.~~ CSR 38; the "Solid Waste Management Regulations" as filed and ~~became~~ effective on ~~April 1, 1988~~ May 1, 1990.

1.6. **Lawful Disposal of Solid Waste Required.** -- Solid waste ~~shall~~ must be disposed, processed, stored, transferred, or recycled only at permitted solid waste facilities as described in ~~section 3 of these~~ this ~~regulations~~ rule. Solid waste landfill facilities failing to satisfy this rule are considered open dumps, as defined in section 2 of this rule, and will be subject to the actions and penalties outlined in Chapter 22, Article 15, Section 15.

1.7. **Incorporation by Reference.** -- Whenever federal or state statutes, ~~or~~ rules or regulations are incorporated into ~~these regulations~~ this rule by reference, the reference is to the statute, ~~or~~ rule or regulation in effect on ~~November 4, 1988~~ the date stipulated by section 1.4 of this rule.

§47-38-2. **Definitions.**

Unless the context clearly requires a different meaning, all terms contained in this section are defined by their plain meaning. This section contains definitions for terms that appear throughout this rule.

2.1. **"Access Road"** means ~~all roads providing~~ any road used for facility access, or for the hauling of solid waste to a solid waste facility, including internal or infrequently used access roads to all monitoring and treatment appurtenances or from a road that is under federal, state, or local authority.

2.2. **"Act"** means the "Solid Waste Management Act," as amended, W. Va. Code §22-15-1, ~~20-5F~~ et seq.

2.3. **"Active Life"** means the period of operation beginning with the initial receipt of solid waste and ending at completion of closure activities performed in accordance with section 6 of this rule.

2.4. **"Active Portion"** means that part of a solid waste facility that has received or is receiving wastes and/or has not been closed in accordance with section 6 of this rule.

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

2.6. **"Applicant"** means the person applying for a commercial solid waste facility permit or similar renewal permit and any person related to such

person by virtue of common ownership, common management or family relationships as the director specifies, including the following: Spouses, parents and children and siblings.

~~2.3.~~ 2.7. **"Approved Solid Waste Facility"** means a solid waste facility or practice which has a valid permit under the Act or which is otherwise authorized to conduct solid waste activities under the Act.

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

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

2.10. **"Asbestos"** means the asbestiform varieties of chrysotile (serpentinite) crocidolite (riebeckite) (erocidolite), amosite (cummingtonite-grunerite), anthophyllite, tremolite and actinolite.

2.11. **"Background Investigation Disclosure Statement"** means a required statement, on a form prescribed by the director, filed by any person or persons who are an applicant, permittee, operator, owner or other person of a solid waste facility, containing all required information for the conductance of a background investigation.

2.12. **"Backhauling"** means the practice of using the same container to transport solid waste and to transport any substance or material used as food by humans, animals raised for human consumption or reusable item which may be refilled with any substance or material used as food by humans.

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

~~2.4.~~ 2.14. **"Bond"** means any performance bond or other form of financial assurance contemplated ~~by~~ pursuant to W. Va. Code §22-15-12. ~~20-5F-5b~~

2.15. **"Bulking Agent"** means any material mixed and composted with sewage sludge.

~~2.5.~~ 2.16. **"Bulky Goods"** means ~~any~~ large items of solid waste such as ~~stoves, washers~~ furniture, large automobile parts, water heaters, or other large, discarded appliances or metal products which are introduced ~~on~~ to a solid waste landfill for disposal and whose large size precludes, or complicates their handling.

2.17. **"Category I Nonfriable Material"** means asbestos-containing materials such as packing, gaskets, asphalt roofing, and vinyl floor covering, containing one or more percent asbestos, which is not in poor condition and is

not friable.

2.18. "Category II Nonfriable Material" means asbestos-containing materials such as transite siding, transite roofing, and brittle vinyl floor covering, containing one or more percent asbestos, which is not friable but likely to become crumbled, pulverized, or reduced to powder during demolition or disposal.

~~2.6.~~ 2.19. "Chief" means the chief of the Office of Waste Management of the West Virginia Division of ~~Water Resources~~ Environmental Protection ~~of the Department of Natural Resources~~ or ~~his~~ the chief's authorized representative.

~~2.7.~~ 2.20. "Class A Solid Waste Facility" means a commercial solid waste facility which ~~is authorized~~ handles ~~to handle~~ an aggregate of between ten thousand (10,000) ~~tons or more~~ and thirty thousand (30,000) tons of solid waste per month ~~at one or more commercial solid waste disposal facilities in the county~~. Class A facility includes two or more Class B solid waste landfills owned or operated by the same person in the same county, ~~(or region if said county participates in a regional solid waste authority pursuant to W. Va. Code §20-9) in which the solid waste disposal facility is to be located~~ if the aggregate tons of solid waste handled per month by such landfills exceeds nine thousand nine hundred ninety-nine tons of solid waste per month.

~~2.8.~~ 2.21. "Class B Solid Waste Facility" means a commercial solid waste facility which receives or is expected to receive an average daily quantity of mixed solid waste equal to or exceeding one hundred (100) tons each working day, or serves or is expected to serve a population equal to or exceeding forty thousand (40,000) persons, but which does not receive ~~or is expected to receive~~ solid waste exceeding an aggregate of ten thousand (10,000) tons per month. Class B ~~solid waste disposal~~ facilities do not include construction/demolition facilities: Provided, That the definition of Class B facility may include such reasonable subdivisions or subclassifications as the director may establish by legislative rule proposed in accordance with the provisions of W. Va. Code §29A-1-1 et seq.

~~2.9.~~ 2.22. "Class C Solid Waste Facility" means a commercial solid waste facility which receives or is expected to receive an average daily quantity of mixed solid waste of less than one hundred (100) tons each working day, and serves or is expected to serve a population of less than forty thousand (40,000) persons. Class C solid waste facilities ~~does~~ not include construction/demolition facilities.

~~2.10.~~ 2.23. "Class D Solid Waste Facility" means any solid waste facility for the disposal of only construction/demolition waste and shall not include the legitimate beneficial reuse of clean waste concrete/masonry substances for the purpose of structural fill or roadbase material. Such facilities are further defined as follows:

~~2.10.1.~~ 2.23.1. "Class D-1 Solid Waste Facility" means a commercial or noncommercial facility other than a Class D ~~those classified D-2 or D-3~~ solid waste facility permitted pursuant to section 3.16.5.d.

~~2.10.2. "Class D-2 Solid Waste Facility" means a noncommercial facility less than two (2) acres in area and where the waste to be disposed of is~~

~~created by the applicant.~~

~~2.10.3. "Class D 3 Solid Waste Facility" means a noncommercial facility not more than one half (½) acre in area and located on land owned by the applicant.~~

~~2.11.~~ 2.24. **"Class E Solid Waste Facility"** means any solid waste facility for the purpose of recycling at which neither land disposal nor biological, chemical, or thermal transformation of solid waste occurs.

~~2.12.~~ 2.25. **"Class F Solid Waste Facility"** means any industrial solid waste disposal facility.

~~2.13.~~ 2.26. **"Clean Water Act" or "CWA"** means the "Federal Water Pollution Control Act," as amended; 33 U.S.C. §1251 et seq.

~~2.15.~~ 2.27. **"Coal Combustion By-Products"** means the residuals, including fly ash, bottom ash, bed ash, and boiler slag flue gas emission control waste produced by coal-fired or coal/gas-fired electrical or steam generating units. For non-electrical steam generating units burning a combination of solid waste and coal, a carbon monoxide (CO) level of less than or equal to one hundred parts per million (100 ppm) on a 24-hour average basis is required for the by-products to meet this definition. The carbon monoxide level ~~shall~~ must be calculated on a dry gas basis corrected to seven percent (7%) oxygen.

~~2.14.~~ 2.28. **"Coal Combustion By-Product Facility"** means a facility for the disposal of coal combustion by-products, including coal combustion by-product landfills and coal combustion by-product disposal surface impoundments, and ~~shall~~ does not include the legitimate beneficial use of coal combustion by-products.

2.29. "Commercial Recycler" means any person, corporation or business entity whose operation involves the mechanical separation of materials for the purpose of reselling or recycling at least seventy percent (70%) by weight of the materials coming into the commercial recycling facility.

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

~~2.16.~~ 2.31. **"Commercial Solid Waste Facility"** means any solid waste facility which accepts solid waste generated by sources other than the owner or operator of the facility and ~~shall~~ does not include an approved solid waste facility owned and operated by a person for the sole purpose of disposing of solid wastes created by that person or such person and other persons on a cost-sharing or nonprofit basis and ~~shall~~ does not include land upon which reused or recycled materials are ~~the legitimate beneficial use of coal combustion by-products or the reuse or recycling of materials~~ legitimately applied for structural fill, road base, mine reclamation, and similar applications.

2.32. "Composite Liner" means a system consisting of two components; the upper component must consist of a minimum 60-mil high density polyethylene (HDPE) and the lower component must consist of at least a two-foot layer of

compacted soil with a hydraulic conductivity of no more than $1X10^{-7}$ cm/sec. The HDPE component must be installed in direct and uniform contact with the compacted soil component.

~~2.17.~~ 2.33. "Composting" means the ~~process by which organic solid waste is biologically decomposed under controlled anaerobic or~~ aerobic, thermophilic decomposition of natural constituents of solid waste to produce a stable, ~~conditions to yield a~~ humus-like material. ~~product.~~

2.34. "Composting Facility" means any solid waste facility processing solid waste by composting, including sludge composting, organic waste or yard waste composting, but does not include a facility for composting solid waste that is located at the site where the waste was generated.

~~2.18.~~ 2.35. "Construction/Demolition Waste" means waste building materials, packaging, and grubbing waste, ~~and rubble~~ resulting from construction, remodeling, repair and demolition operations on houses, commercial and industrial buildings, ~~and other structures and~~ pavements, including, but not limited to, wood, plaster, metals, asphaltic substances, bricks, blocks and concrete, other masonry materials, ~~trees, brush, stumps, and other vegetative materials~~ but ~~shall~~ does not include asbestos waste.

~~2.19.~~ 2.36. "Cover Material" means soil or other material, approved by the ~~chief~~ director and used in a controlled manner to cover solid waste at solid waste disposal facilities.

~~2.20. "Department" means the West Virginia Department of Natural Resources.~~

~~2.21.~~ 2.37. "Director" means the director of the West Virginia ~~Department of Natural Resources~~ Division of Environmental Protection or such other person to whom the director has delegated authority or duties pursuant to Article one, Chapter twenty-two of the Code of West Virginia, or ~~his~~ the director's authorized representative. For the purpose of this rule, the term "director" also means the director of the West Virginia's solid waste permit program in the administration of sections 2002 and 4005 of RCRA.

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

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

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

~~2.22.~~ 2.41. "Division" means the West Virginia Division of ~~Water Resources of the West Virginia Department of Natural Resources~~ Environmental Protection or its designee.

~~2.23.~~ 2.42. **"Endangered or Threatened Species"** means any endangered or threatened species, as defined in 50 CFR Part 17, of animal or plant and includes those species ~~that is~~ listed ~~by the federal government~~ as endangered or threatened in 50 ~~C.F.R.~~ CFR Part 17.

2.43. "Energy Recovery Incinerator" means any solid waste facility at which solid wastes are incinerated with the intention of using the resulting energy for the generation of steam, electricity or any other use not specified herein.

2.44. "Existing SWLF" means any solid waste landfill that deposits solid waste after the effective date established in section 1.4 of this rule.

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

2.46. "Floodplain" means the lowland and relatively flat areas adjoining waters of the state that may be inundated by the 100-year flood.

~~2.24.~~ 2.47. **"Friable Asbestos"** means any friable solid waste material containing more than one percent (1%) asbestos by weight that hand pressure can crumble, pulverize, or reduce to powder when dry.

2.48. "Gas Condensate" means the liquid generated as a result of gas recovery process(es) at the SWLF.

2.49. "Groundwater" means any water occurring in the zone of saturation beneath the seasonal high water table, or any perched water zones, or water below the land surface in a zone of saturation.

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

2.51. "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).

2.52. "Incineration Technologies" means any technology that uses controlled flame combustion to thermally break down solid waste, including refuse-derived fuel, to an ash residue that contains little or no combustible materials, regardless of whether the purpose is processing, disposal, electric or steam generation or any other method by which solid waste is incinerated.

~~2.25.~~ 2.53. **"Incinerator"** means ~~any~~ enclosed device ~~used~~ using ~~to accomplish incineration, including incinerators associated with resource recovery.~~ controlled flame combustion to thermally break down solid waste, including refuse-derived fuel, to an ash residue that contains little or no combustible materials.

~~2.26.~~ 2.54. **"Industrial Solid Waste"** means any solid waste generated by ~~resulting from mining,~~ manufacturing, or industrial processes~~.~~ that is not a hazardous waste regulated under subtitle "C" of RCRA. ~~Manufacturing or~~

~~industrial processes~~ Such wastes may include, but are not limited to, waste resulting from ~~those processes and activities carried on in~~ factories, processing plants, refineries, fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; slaughter houses, mills, tanneries, electric power generating plants, mines, or mineral processing operations~~.~~; 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.

~~2.27.~~ 2.55. **"Industrial Solid Waste Landfill"** means any solid waste disposal facility which is owned, operated, or leased by an industrial establishment for the land disposal of industrial solid waste created by that person or such person and other persons on a cost-sharing or nonprofit basis. The term "industrial solid waste landfill" does not include land application units, surface impoundments, or injection wells.

~~2.28.~~ 2.56. **"Infectious Medical Waste"** means infectious medical waste which is capable of producing an infectious disease. Medical waste is considered capable of producing an infectious disease if it has been, or is likely to have been, contaminated by an organism likely to be pathogenic to healthy humans, if such organism is not routinely and freely available in the community, and such organism has a significant probability of being present in sufficient quantities and with sufficient virulence to transmit disease. For the purposes of this rule, infectious medical waste includes the following materials: ~~with infectious characteristics including animal waste, bulk human blood and blood products, laboratory waste, pathological waste, and sharps.~~

~~2.28.1.~~ 2.56.1. **"Animal Carcasses, Body Parts, Bedding and Related Waste"** means contaminated animal carcasses, body parts, and the bedding of animals that are known to have ~~a high probability of having~~ been exposed to infectious agents during research ~~(including research in veterinary hospitals)~~, the production of biologicals, or the testing of pharmaceuticals, or for any other reason.

~~2.28.2.~~ 2.56.2. **"~~Bulk Human~~ Blood and Blood Products"** means liquid waste human blood and blood products in a free-flowing or unabsorbed state ~~including, but not limited to, blood plasma, serum, platelets, and red or white blood corpuscles~~;

~~2.28.3.~~ 2.56.3. **"Laboratory Wastes"** means cultures and stocks of infectious agents and associated biologicals including, but not limited to, cultures from medical and pathological laboratories, cultures and stocks of infectious agents from research and industrial laboratories, wastes from the production of biologicals, and discarded live and attenuated vaccines;

2.56.4. **"Cultures and Stocks of Microorganisms and Biologicals"** means discarded cultures, stocks, specimens, vaccines and associated items likely to have been contaminated by an infectious agent, discarded etiologic agents, and wastes from the production of biologicals and antibiotics likely to have been contaminated by an infectious agent.

~~2.29.4.~~ 2.56.5. "**Pathological Wastes**" means human pathological wastes, including tissues, organs, ~~and~~ body parts, and containers of ~~free flowing or unabsorbed~~ body fluids exclusive of those fixed in formaldehyde or another fixative.

~~2.29.5.~~ 2.56.6. "**Sharps**" means discarded articles that may cause punctures or cuts and that have ~~a high probability of having~~ been used in animal or human patient care or treatment, or in pharmacies or medical, research, or industrial laboratories, including, but not limited to, ~~and of having been exposed to infectious agents. The term "sharps" includes~~ hypodermic needles, syringes with attached needles, ~~and~~ scalpel blades, lancets and broken glassware.

2.56.7. "**Isolation Wastes**" means wastes generated from the care of a patient who has or is suspected of having any disease listed as Class IV in "Classification of Etiologic Agents on the Basis of Hazard" published by the United States Centers for Disease Control.

2.56.8. "**Other Infectious Wastes**" includes, but is not limited to any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill of any infectious medical waste, and waste contaminated by or mixed with infectious medical waste.

~~2.29.~~ 2.57. "**Karst Region**" means a type of topography which is formed over limestone or dolomite by dissolution of the formation and is characterized by sinkholes, caves, and similar features.

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

~~2.30.~~ 2.59. "**Land Application**" means the application of liquid wastes onto a soil surface or the incorporation of solid waste into the soil surface for treatment and disposal.

~~2.31.~~ 2.60. "**Landfill**" means ~~an~~ any solid waste facility or part of one at which solid waste, or its residue after treatment, is intentionally used for ~~placed~~ disposal in or on land, ~~and~~ at which solid waste will remain after closure. Such facility is situated, for the purposes of this rule, in the county where the majority of the spatial area of the facility is located. The term "landfill" does not include a land application unit, ~~surface impoundment, solid waste disposal surface impoundment,~~ or injection well.

2.61. "**Lateral Expansion**" means a horizontal expansion of the waste boundaries of an existing SWLF.

~~2.32.~~ 2.62. "**Leachate**" means any liquid that has come into contact with, passed through or emerged from solid waste and contains soluble, suspended, or miscible materials removed from such waste.

~~2.33.~~ 2.63. "**Lift**" means the vertical thickness of compacted solid waste and the cover material immediately above it.

~~2.34.~~ 2.64. **"Liner"** means a continuous layer of natural or manmade materials, beneath or on the sides of a surface impoundment, landfill, or landfill cell, which restricts the downward or lateral escape of solid waste, any constituents of such waste, or leachate and which complies with this rule ~~these regulations~~.

2.65. "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).

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

~~2.35.~~ 2.67. **"Lower Explosive Limit"** ("LEL") means the lowest percent by volume of a mixture of explosive gases in air that ~~which~~ will propagate a flame ~~in air~~ at twenty-five degrees centigrade (25 degrees C) and atmospheric pressure.

~~2.36.~~ 2.68. **"Major Alluvial Aquifer"** means an aquifer composed of alluvial materials located adjacent to West Virginia rivers, such as the Kanawha River, Little Kanawha River, and Ohio River as depicted on Groundwater Hydrology of the Minor Tributary Basins of those rivers. ~~the Kanawha River, West Virginia; Groundwater Hydrology of the Little Kanawha River Basin, West Virginia; and Groundwater Hydrology of the Minor Tributary Basins of the Ohio River, West Virginia atlas~~.

~~2.37.~~ 2.69. **"Major Domestic Use Aquifer"** means an aquifer which serves as a domestic or public water supply serving at least an average of twenty-five (25) individuals per day for at least sixty (60) days per year, or which has at least fifteen (15) service connections.

~~2.38.~~ 2.70. **"Major Modification"** is a modification to an approved permit in which a major change to the permit is to occur as specified in section 3.18 of ~~these regulations~~ this rule.

2.71. "Materials Recovery Facility" means any solid waste facility at which source-separated materials or materials recovered through a mixed waste processing facility are manually or mechanically shredded or separated for purposes of reuse and recycling, but does not include a composting facility.

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

2.73 "Mixed Solid Waste" means solid waste from which materials sought to be reused or recycled have not been source-separated from general solid waste.

2.74 "Mixed Waste Processing Facility" means any solid waste facility at which materials are recovered from mixed solid waste through manual or mechanical means for purposes of reuse, recycling or composting.

2.75. "Municipal Solid Waste" means any household or commercial solid wastes as defined in this rule and any sludge from a waste treatment plant or a water supply treatment plant.

2.76. "Municipal Solid Waste Incineration" means the burning of any solid waste collected by any municipal or residential solid waste disposal company.

2.77. "New SWLF" means any solid waste landfill facility that has not received waste prior to the effective date established in section 1.4 of this rule.

2.78. "Noncommercial Solid Waste Facility" means any approved solid waste facility owned and operated by a person for the sole purpose of disposing of solid wastes created by that person or such person and other persons on a cost-sharing or nonprofit basis.

2.79. "Office" means the Office of Waste Management of the West Virginia Division of Environmental Protection or its designee.

2.80. "Open Burning" means the combustion of solid waste without:

2.80.1 Control of combustion air to maintain adequate temperature for efficient combustion;

2.80.2 Containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion; and

2.80.3 Control of the emission of the combustion products.

~~2.39.~~ 2.81. "Open Dump" means any solid waste disposal which does not have a permit under W. Va. Code §22-15, ~~20-5F~~ and is not otherwise authorized by an order of the ~~chief or~~ director, ~~or for which a valid permit application is currently under agency review, which~~ or is in violation of state law; or where solid waste is disposed in a manner that does not protect the environment.

2.82. "Operator" means the person(s) responsible for the overall operation of a solid waste facility or part thereof.

2.83. "Operating Hours" means the predetermined period of time specified by the facility permit or other such approval by the director during which activities may be conducted at a solid waste facility. These activities are not limited to the actual process of disposal.

2.84. "Origin" means, for the purpose of section 4.12 of this rule, the actual point or location of waste generation, and not the point or location of transfer or the transfer station.

2.85. "Owner" means the person(s) who owns a solid waste facility or part thereof.

2.86. "Perennial Stream" means a stream or a portion of a stream that flows continuously or that under normal conditions supports aquatic life whose life history requires residence in flowing water for a continuous period of at least six (6) months.

~~2.40.~~ 2.88. "Permittee" ~~or "Operator" shall~~ means any person holding ~~or executing~~ a permit or who is otherwise authorized to conduct solid waste activities under the Act.

~~2.41.~~ 2.89. "Persistent Violation" means any violation of the Act, ~~these regulations~~ this rule, any permit term or condition, or any order of the ~~chief or the director issued pursuant to the Act or these regulations~~ this rule which is identified during two or more consecutive inspections performed by the ~~chief or the~~ director.

~~2.42.~~ 2.90. "Person," or "Persons," ~~or "Applicant"~~ means:

~~2.42.1.~~ 2.90.1. Any industrial user, public or private corporation, institution, association, firm, or company organized or existing under the laws of this or any other state or country;

~~2.42.2.~~ 2.90.2. The State of West Virginia;

~~2.42.3.~~ 2.90.3. Any governmental agency, including federal facilities;

~~2.42.4.~~ 2.90.4. Any political subdivision of this State, including county commission, municipal corporation, industry, sanitary district, public service district, drainage district, soil conservation district, or watershed improvement district;

~~2.42.5.~~ 2.90.5. Any partnership, trust, or estate;

~~2.42.6.~~ 2.90.6. Any person or individual;

~~2.42.7.~~ 2.90.7. Any group of persons or individuals acting individually or as a group; or

~~2.42.8.~~ 2.90.8. Any legal entity whatever.

2.91. "Petroleum" means petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 lbs. per square inch absolute) and pipeline liquids. The term includes any refined petroleum products.

2.92. "Petroleum-Contaminated Soil" means any soil, dirt, rock or other earthen material which contains more than a de minimis (100 ppm of total petroleum hydrocarbons or less) amount of petroleum and which is not a hazardous waste.

~~2.43.~~ 2.93. "Point Source" means any discernible, confined, and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, or vessel, ~~or~~ floating craft, or system, or landfill leachate collection system from which pollutants are or may be discharged to the waters of the State.

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

~~2.44.~~ 2.95. "Post-Closure" means activities after the closure of a solid waste facility which are necessary to ensure compliance with the provisions of the Act and ~~regulations~~ any rules promulgated thereunder including the application of final cover, grading, revegetation, groundwater monitoring, surface water monitoring, gas monitoring and control, leachate treatment, erosion control, and the abatement of any pollution or degradation to land, water, air, or other natural resources.

~~2.45.~~ 2.96. "Publicly-Owned Treatment Works" or "POTW" means any device or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a state or municipality as defined by ~~section 502(4) of~~ the Clean Water Act. This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

~~2.46.~~ 2.97. "Q.A./Q.C." means "quality assurance and quality control."

2.98. "Qualified Groundwater Scientist" is a scientist or engineer who has received a baccalaureate or postgraduate degree in the natural sciences or engineering and has sufficient training and experience in groundwater hydrology and related fields as may be demonstrated by state registration, professional certification(s), or completion of accredited university programs that enable that individual to make sound professional judgements regarding groundwater monitoring, contaminant fate and transport, and corrective action.

2.99. "Receiving Hours" means the period of time designated by the facility solid waste permit, or otherwise approved by the director within the operating hours that the solid waste facility accepts solid waste for disposal.

~~2.47.~~ 2.100. "Recycle" means the process by which recovered products are transformed into new products and includes the collection, separation, recovery and sale, or reuse of metals, glass, paper, and other materials.

~~2.48.~~ 2.101. "Recycling Facility" means any solid waste facility for the purpose of recycling at which neither land disposal nor biological, chemical, or thermal transformation of solid waste occurs; Provided, That mixed waste recovery facilities, sludge processing facilities and composting facilities are not considered recycling facilities nor considered to be reusing or recycling solid waste within the meaning of Chapter 22, Article 15, Chapter 22C, Article 4, and Chapter 20 Article 11, of the Code.

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

~~2.49.~~ 2.103. "Resource Recovery Facility" means any solid waste facility at which solid wastes are physically, mechanically, biologically, chemically, or thermally transformed for the purpose of separating, removing, or creating

any material or energy for reuse or sale and at which land disposal of solid waste does not occur. Resource recovery facilities include ~~composting plants,~~ incinerators equipped with integral or separate heat recovery systems, and other such solid waste facilities not herein specified, but does not include sewage sludge processing facilities.

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

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

2.106. "Salvage" means, but is not limited to, scrap copper, brass, rope, rags, paper, rubber, junked, dismantled, or wrecked machinery, machine or motor vehicles or any parts thereof; or iron, steel and other scrap ferrous or nonferrous materials.

2.107. "Salvage Yard" means any facility which is maintained, operated or used for the storing, buying, selling or processing of salvage materials or for the operation and maintenance of a motor vehicle graveyard, at which only mechanical processing of solid waste takes place and where no solid waste is disposed of on-site.

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

2.109. "Scale" or "Scale House" means the area of the facility where waste initially enters the premises and the total and tare weights are determined and a receipt of deposit is generated.

~~2.50.~~ 2.110. "Schedule of Compliance" or "Compliance Schedule" means a list of activities approved or ordered by the ~~chief or~~ director, which may include dates or specified times for completion of each or all activities which, when completed, will result in a site, facility, or practice which is environmentally sound and conforms to the requirements of the Act, ~~these regulations~~ this rule, or permit terms and conditions.

2.111. "Seismic Impact Zone" means an area with a ten percent (10%) or greater probability that the maximum horizontal acceleration in lithified earth material, expressed as a percentage of the earth's gravitational pull will exceed 0.10g in a 250-year period.

~~2.51.~~ 2.112. "Sewage" means water-carried human or animal wastes from residences, buildings, industrial establishments, or other places together with such groundwater infiltration and surface waters as may be present.

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

2.114. "Sewage Sludge Processing Facility" it is a solid waste facility that processes sewage sludge for land application, incineration or disposal at an approved landfill. Such processes include, but are not limited to, composting, lime stabilization, thermophilic digestion and anaerobic digestion.

~~2.52.~~ 2.115. "Sludge" means any solid, semi-solid, or liquid waste, or residue, or precipitate, generated from, or separated from or created by a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility~~,~~ or any other such waste having similar origin, exclusive of the treated effluent from a wastewater treatment plant.

~~2.53.~~ 2.116. "Solid Waste" means any garbage; paper; litter; refuse; cans; bottles; waste processed for the express purpose of incineration; sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility; and other discarded materials, including carcasses of any dead animal or any other offensive or unsightly matter; solid, liquid, semisolid, or contained liquid or gaseous material resulting from industrial, commercial, mining, agricultural operations, and ~~or~~ community activities. The term "solid waste" does not include:

~~2.53.1~~ 2.116.1. Solid or dissolved materials in domestic sewage;

~~2.53.2~~ 2.116.2. Solid or dissolved materials in irrigation return flows;

~~2.53.3~~ 2.116.3. Industrial discharges ~~which~~ that are point sources and have permits under W. Va. Code §22-11; ~~20-5A,~~ or subject to permit under 33 U.S.C. 1342;

~~2.53.4~~ 2.116.4. Source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended, (68 Stat 923) including any nuclear or by-product material considered by federal standards to be below regulatory concern;

~~2.53.5~~ 2.116.5. A hazardous waste either identified or listed under W. Va. Code §22-18 ~~20-5E~~;

~~2.53.6~~ 2.116.6. Refuse, slurry, overburden, or other wastes or material -- resulting either from coal-fired electric power or steam generation, or from the exploration, development, production, storage, and/or recovery of coal, oil and gas and/or other mineral resources -- that ~~is~~ are placed or disposed of at a facility which is regulated under W. Va. Code §§22-2-1 et seq., 22-3-1 et seq., 22-4-1 et seq., 22-6-1 et seq., 22-7-1 et seq., 22-8-1 et seq., 22-9-1 et seq., 22-10-1 et seq., 22A-1-1 et seq., 22C-2-1 et seq., 22C-7-1 et seq., 22C-8-1 et seq., or 22C-9-1 et seq., ~~22, 22A, or 22BA~~ so long as such placement or disposal is in conformance with a permit issued pursuant to such chapters; and

~~2.53.7~~ 2.116.7. Materials which are recycled by being used or reused in an industrial process to make a product, as effective substitutes for commercial products, or are returned to the original process as ~~a~~ substitutes for raw material feedstock.

~~2.54.~~ 2.117. **"Solid Waste Disposal"** means the practice of disposing of solid waste including placing, depositing, dumping, or throwing or causing to be placed, deposited, dumped, or thrown any solid waste.

2.118. **"Solid Waste Disposal Shed"** means the geographical area which the solid waste management board designates and files in the State Register pursuant to W. Va. Code §22C-3-9.

~~2.55.~~ 2.119. **"Solid Waste Disposal Surface Impoundment"** means a natural depression or manmade excavation or diked area that is designed for the disposal of solid waste containing free liquids and that is not an injection well, landfill, land application unit, or a surface impoundment as defined in section 2 ~~.58~~ of ~~these regulations~~ this rule.

~~2.56.~~ 2.120. **"Solid Waste Facility"** means any system, facility, land, contiguous land, improvements on the land, structures, or other appurtenances or methods used for processing, recycling, or disposing of solid waste including landfills, solid waste disposal surface impoundments, transfer stations, incinerators, ~~resource recovery facilities,~~ recycling facilities, material's recovery facilities, mixed waste processing facilities, sewage sludge processing facilities, composting facilities and other such facilities not herein specified, but not including land upon which sewage sludge is applied in accordance with W. Va. Code §22-15-20(b). Such facility is deemed to be situated, for purposes of this rule, in the county where the majority of the spatial area of such facility is located: Provided, That a salvage yard, licensed and regulated pursuant to the terms of W. Va. Code §17-23-1 et seq., is not a solid waste facility.

2.121 **"Solid Waste Landfill Facility (SWLF)"** means a discrete area of land, or portion thereof, or an excavation that receives household waste, and that is not a land application facility, surface impoundment, injection well, or waste pile. A SWLF may also receive other types of RCRA subtitle D solid wastes, such as commercial solid wastes, nonhazardous sludge, small quantity generator wastes, and industrial solid wastes. Such a landfill may be a new SWLF, an existing SWLF, or a lateral expansion publicly or privately owned.

2.122. **"Solid Waste Facility Operator"** means any person or persons possessing or exercising operational, managerial or financial control over a commercial solid waste facility, whether or not such person holds a certificate of convenience and necessity or a permit for such facility.

~~2.57.~~ 2.123. **"State Water Pollution Control Act"** means W. Va. Code §22-11-1 ~~20-5A~~, et seq.

2.124. **"Source-Separated Materials"** means materials separated from general solid waste at the point of origin for the purpose of reuse and recycling but does not mean sewage sludge.

2.125. **"Storage" or "Storage Area"** means the interim storage of solid waste, at a permitted solid waste facility on a temporary basis. Any storage that exceeds one hundred eighty (180) days, without the prior written approval of the director, in such a manner, constitutes illegal disposal of such solid waste (i.e., staging areas).

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

2.127. "Structural Fill" means an engineered/designed and controlled homogeneous fill with a projected spread in lifts not exceeding twelve (12) inches and compacted with proper power equipment. The material must be compacted in horizontal lifts to achieve the required design dry density and in-situ strength.

~~2.58.~~ 2.128. **"Surface Impoundment"** means a facility or part of a facility which is a natural topographic depression, manmade excavation, or diked area that is designed to hold an accumulation of contaminated surface runoff or leachate or both.

~~2.59.~~ 2.129. **"Transfer Station"** means a combination of permanent structures, machinery, or devices at a place or facility where solid waste is taken from collection vehicles, often compacted, and prepared for shipment ~~placed~~ in other transportation units for movement to another solid waste management facility. Provided that, when solid waste is collected in a container including rolloffs, green boxes or bins which are temporarily positioned (not more than five days) at a specific location for transport by a transportation unit, such shall not be considered a transfer station. Leachate must be properly managed under either described activity.

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

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

~~2.60.~~ 2.132. **"Uppermost Significant Aquifer"** means the first, uppermost aquifer encountered which is laterally persistent under the entire site and is free flowing throughout the year. This defines the aquifer which flows all twelve (12) months of the year and can be encountered under any given point on the permitted site.

~~2.61.~~ 2.133. **"USGS"** means the "United States Geological Survey."

~~2.62. "Vector" means any insect, rodent, or other organism capable of directly or indirectly transmitting infectious diseases or pathogenic organisms from one person to another or from an animal to a person.~~

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

2.135. "Waste Management Facility Boundary" means a vertical surface located at the hydraulically downgradient limit of the facility. This

vertical surface extends down into the uppermost aquifer.

~~2.63.~~ 2.136. **"Water Resources," "Water," or "Waters"** means any and all water on or beneath the surface of the ground, whether percolating, standing, diffused or flowing, wholly or partially within this state, or bordering this state and within its jurisdiction, and includes, without limiting the generality of the foregoing, natural or artificial lakes, rivers, streams, creeks, branches, forks, brooks, ponds (except farm ponds, industrial settling basins and ponds and water treatment facilities), impounding reservoirs, springs, wells, watercourses, and natural wetlands.

~~2.64.~~ 2.137. **"Wetlands"** means those naturally occurring areas, as defined under 40 CFR 232.2(r) that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that, under normal circumstances, do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

2.138. **"7Q10"** means the seven (7) consecutive day drought flow with a ten (10) year return frequency.

~~2.65.~~ 2.139. **"100-Year Flood"** means a flood that has a 1-percent or greater chance of recurring in any given year or a flood of a magnitude equaled or exceeded once in 100 years on the average, over a significantly long period of time.

§47-38-3. Solid Waste Facility ~~and~~ Permitting Requirements.

3.1. Prohibitions.

No person may establish, construct, operate, maintain, or allow the use of property for a solid waste facility within an area where there is a reasonable probability that the facility will cause any of the following:

3.1.1. Natural Wetlands. A significant adverse impact upon natural wetlands, as defined in section 2 of this rule;

3.1.2. Endangered or Threatened Species. A significant adverse impact upon, or jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of a critical habitat of any animal or plant protected under the Endangered Species Act of 1973, and violates any requirement under the Marine Protection, Research and Sanctuaries Act of 1972 for the protection of a marine sanctuary, unless specifically approved by the United States Fish and Wildlife Service;

3.1.3. Surface Water. A ~~statistically~~ significant adverse impact upon any surface water;

3.1.4. Groundwater. A ~~statistically~~ significant adverse impact upon groundwater quality;

3.1.5. Compliance with other agency requirements.

3.1.5.a. A permittee must comply with any and all applicable federal

and state laws, rules, regulations or other requirements.

3.1.5.a.A. Permittees of SWLFs must not: Cause a discharge of pollutants into waters of the state, including natural wetlands, that violates any requirement of the Clean Water Act, as amended or applicable portions of Chapter 22, Article 11, of the Code of West Virginia, including, but not limited to, the National Pollutant Discharge Elimination System (NPDES) requirements, pursuant to Section 402; of the Clean Water Act, or as reflected in Chapter 22, Article 11, of the Code of West Virginia, as amended.

3.1.5.a.B. Cause the discharge of a non-point source of pollution to waters of the state, including natural wetlands, that violates any requirements of an area-wide or state-wide water quality management plan that has been approved under Section 208 or 319 of the Clean Water Act, or as reflected in Chapter 22, Article 11, of the Code of West Virginia, as amended.

3.1.5.a.C. Cause the discharge of a point source of pollution to waters of the State, in ~~A~~ violation of surface water quality standards found in §22-11 or any rules or regulations promulgated thereunder ~~46 C.S.R. 1~~; or

3.1.5.a.D. A violation of the Groundwater Protection Act, W. Va. Code 22-12-1 et seq.

3.1.6. Explosive Gases. Cause the generation by any facility and subsequent migration and concentration of methane or other explosive gases in any facility structure, excluding the leachate collection system or gas control or recovery system components, or in the soils or air at or beyond the facility property boundary in excess of twenty-five percent (25%) of the lower explosive limit for such gases at any time; or

3.1.7. Air Pollution. The emission of any air contaminant exceeding the limitations for those substances as set by the West Virginia Division of Environmental Protection, Office of Air Quality ~~Pollution Control Commission~~.

3.2. Location Standards.

Unless otherwise approved by the director in writing, a person ~~may~~ must not establish, construct, operate, maintain, or allow the use of property for a landfill in the following areas:

(Note: All distance measurements prescribed in section 3.2. of this rule refer to distances as measured from the edge of the waste management unit boundary of a facility.)

3.2.1. Location Standards for Surface Water.

No SWLF may be located within three hundred (300) feet of any surface water (facility drainage or sedimentation control structures are exempt from this distance calculation);

3.2.2. Location Standards for Natural Wetlands.

No SWLF may be located within three hundred (300) feet of any natural wetlands, unless the permittee can make the following demonstrations to the

director (facility drainage or sedimentation control structures are exempt from this distance calculation):

3.2.2.a. Where applicable under section 404 of the Clean Water Act or applicable wetland laws under Chapter 22, Article 11, or any rules promulgated thereunder, the presumption that a practicable alternative to the proposed landfill is available which does not involve natural wetlands is clearly rebutted;

3.2.2.b. The construction and operation of the SWLF must not:

3.2.2.b.A. Cause or contribute to violations of any applicable state water quality standard;

3.2.2.b.B. Violate any applicable Chapter 22, Article 11, and/or other toxic effluent standard or prohibition under section 307 of the Clean Water Act or as reflected in Chapter 22, Article 11, of the Code of West Virginia, as amended;

3.2.2.b.C. Jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Endangered Species Act of 1973; and

3.2.2.b.D. Violate any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary.

3.2.2.c. The SWLF must not cause or contribute to significant degradation of natural wetlands, and the permittee must also demonstrate the integrity of the SWLF and its ability to protect ecological resources by addressing the following factors:

3.2.2.c.A. Erosion, stability, and migration potential of native wetland soils, muds, and deposits used to support the SWLF;

3.2.2.c.B. Erosion, stability, and migration potential of dredged and fill materials used to support the SWLF;

3.2.2.c.C. The volume and chemical nature of the waste managed in the SWLF;

3.2.2.c.D. Impacts upon fish, wildlife, and other aquatic resources and their habitat from any release of the solid waste, or the leachate thereof;

3.2.2.c.E. The potential effects of catastrophic releases of waste or the leachate thereof, to the natural wetlands and the resulting impacts on the environment; and

3.2.2.c.F. Any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected.

3.2.2.c.G. To the extent required under section 404 of the Clean Water Act or applicable state natural wetlands laws as reflected in Chapter

22, Article 11, of the Code of West Virginia, as amended, steps must have been taken to attempt to achieve no net loss of natural wetlands (as defined by acreage and function) by first avoiding impacts to natural wetlands to the maximum extent practicable as required by section 3.2.2.a of this rule, then minimizing unavoidable impacts to the maximum extent practicable, and finally offsetting remaining unavoidable wetland impacts through all appropriate and practicable compensatory mitigation actions (e.g., restoration of existing degraded natural wetlands or creation of manmade natural wetlands).

3.2.3. Perennial Stream Location Standards;

No SWLF may be located within the watercourse of a perennial stream;

3.2.4. Location Standards for Floodplains.

3.2.4.a. Permittees of new SWLFs, existing SWLFs and lateral expansions located ~~Within~~ in a 100-year floodplains must demonstrate that the SWLF does not, and will not:

3.2.4.a.A. Restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or

3.2.4.a.B. Result in a washout of solid waste so as to pose a hazard to human health and/or the environment.

3.2.5. Location Standards for Highways and Public Parks.

New SWLFs and lateral expansions must not be located within one thousand (1,000) feet of the nearest edge of the right-of-way of any state ~~trunk~~ highway, interstate, ~~or~~ federal aid primary or federal aid secondary, or county highway, or the boundary of any public park unless the facility is screened by natural objects, plantings, fences, or other appropriate means so that it is not readily visible from the highway or park;

3.2.6. Location Standards for Fault Areas.

3.2.6.a. New SWLFs and lateral expansions must not be located ~~w~~ within 200 feet (60 meters) of a ~~known~~ faults that ~~have~~ has had displacement in Holocene time (i.e., during the last eleven thousand years);

3.2.6.b. Unless the permittee demonstrates to the director in a permit application that an alternative setback distance of less than 200 feet (60 meters) will prevent damage to the structural integrity of the SWLF and will be protective of human health and the environment.

3.2.7. Location Standards for Airport Safety.

3.2.7.a. Permittees of new SWLFs, existing SWLFs, and lateral expansions must not be located within ten thousand (10,000) feet (3,048 meters) of any portion of the airport runway used or planned to be used by turbojet aircraft or within five thousand (5,000) feet (1,524 meters) of any portion of the airport runway used or planned to be used only by piston-type aircraft or within other areas where a substantial bird hazard to aircraft would be created; unless such applicants demonstrate that the SWLFs are

designed and operated so that the SWLF does not and will not pose a bird hazard to aircraft.

3.2.7.b. Permittees proposing to site new SWLFs and lateral expansions located within a five-mile radius of any portion of an airport runway used by turbojet or piston-type aircraft must provide written notification to both the affected airport and the Federal Aviation Administration (FAA), and provide copies of the same to the director.

3.2.8. Location Standards for Dwellings.

3.2.8.a. Permittees of new SWLFs, and lateral expansions must not be located ~~W~~ within five hundred (500) feet of a dwelling that is, or will be occupied, at the time of initial facility siting, unless written permission is received from the owner of the dwelling;

3.2.9. Location Standards for Wells.

3.2.9.a. Permittees of new SWLFs, existing SWLFs, and lateral expansions cannot be located within twelve hundred (1,200) feet of any public or private water supply well in existence at the time of initial facility siting;

3.2.10. Location Standards for Unstable Areas.

3.2.10.a. Permittees of new SWLFs, existing SWLFs, and lateral expansions cannot be located within one thousand (1,000) feet of any area considered by the director to be unstable ~~unmonitorable~~ due to extreme geologic and hydrologic conditions (e.g., immaturely to maturely developed karst terrain, solution cavities), unless the permittee can demonstrate that engineering measures have been incorporated into the SWLF's design to ensure that the integrity of the structural components of the SWLF will not be disrupted, and

3.2.10.b. The Permittee must consider the following factors, at a minimum, when determining whether an area is unstable:

3.2.10.b.A. On-site or local soil conditions that may result in significant differential settling;

3.2.10.b.B. On-site or local geologic or geomorphologic features; and

3.2.10.b.C. On-site or local human-made features or events (both surface and subsurface).

3.2.11. Location Standards for Underground Mines.

3.2.11.a. Permittees of new SWLFs, and lateral expansions cannot be located above ~~deep~~ underground mine workings or within the critical angle of draw of such workings, unless otherwise approved by the director in writing; ~~or~~

3.2.12. Location Standards for Surface Mines.

Permittees of new SWLFs, and lateral expansions cannot be located within previously surface mined areas, unless otherwise approved by the director in writing.

3.2.13. Location Standards for Seismic Impact Zones.

New SWLFs and lateral expansions must not be located in seismic impact zones, unless the permittee demonstrates to the Director that all containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.

3.2.14. Location Standards for Air Criteria.

3.2.14.a. All permittees must ensure that violations of the applicable requirements developed under a State Implementation Plan (SIP) promulgated pursuant to section 110 of the Clean Air Act, as amended or as reflected in the rules promulgated by the Office of Air Quality, do not occur.

3.2.14.b. Open burning of solid waste, except for the infrequent burning of agricultural wastes, silvicultural wastes, landclearing debris, diseased trees, or debris from emergency cleanup operations, except as approved by the Office of Air Quality, is prohibited at all SWLFs.

3.2.15. Recordkeeping.

The permittee must retain a copy of all such demonstrations for location standards that have previously received the written approval of the director pursuant to this section in the facility operating record, as required by section 4.4 of this rule.

~~Note: All distance measurements prescribed in Section 3.2. of this rule refers to distances as measured from the edge of the proposed boundary of a facility at the end of its active life.~~

3.3. Approvable Facilities.

3.3.1. Approvable Solid Waste Facilities.

Solid waste facilities for which approval may be granted include the following, or any combination thereof:

3.3.1.a. Class A Solid Waste Facility;

3.3.1.b. Class B Solid Waste Facility;

3.3.1.c. Class C Solid Waste Facility;

3.3.1.d. Class D Solid Waste Facility;

3.3.1.e. Class E Solid Waste Facility;

3.3.1.f. Class F Solid Waste Facility; ~~or~~

3.3.1.g. Sewage Sludge Processing Facility;

3.3.1.h. Yard Waste Composting Facility;

3.3.1.i. Mixed Waste Processing Facility; and/or

3.3.1.j. Other solid waste facilities approved in writing by the director.

3.4. Pre-Siting Requirements for Commercial Solid Waste Facilities.

Except those recycling facilities specifically exempted by section 20-11-12 of the Code, any person wishing to apply for a permit under Article 22-15 must comply with the following:

3.4.1. Any person investigating an area for the purpose of siting a commercial solid waste facility where no current solid waste facility exists, in order to determine a feasible, approximate location, and ~~,~~ in order to obtain a permit to construct and operate a commercial solid waste facility in this state ~~after June 10, 1989~~, a person ~~shall~~ must have complied with the pre-siting requirements of section 22-15-13 of the Code of West Virginia, including, but not limited to the following:

3.4.1.a. Publish a Class II legal advertisement in a qualified newspaper, as defined in W. Va. Code §59-3-1, serving the county or counties in which the proposed facility is to be located. This legal advertisement ~~will~~ must include the nature of the proposed activity, and:

3.4.1.a.A. A description of the location or locations at which the proposed facility may be sited;

3.4.1.a.B. A statement of the anticipated size of the proposed facility, in acres; and

3.4.1.a.C. An estimate of the volume, type, and origin of solid waste to be handled at the proposed facility.

3.4.1.b. File a pre-siting notice with the director within five (5) days of the publication of the legal advertisement required under section 3.4.1.a of ~~these regulations~~ this rule. The pre-siting notice ~~shall~~ must be made in writing on forms obtained from the director, which must be signed and verified by the applicant, and must include:

3.4.1.b.A. A certification of publication of the legal advertisement required under section 3.4.1.a of ~~these regulations~~ this rule from ~~the~~ a qualified newspaper, as defined in W. Va. Code §59-3-1 in which such advertisement was published;

3.4.1.b.B. A description of each location at which the proposed facility or facilities may be sited;

3.4.1.b.C. A United States Geological Survey (USGS) topographic map or portion thereof, and a map showing the location and anticipated property, site, and other boundaries of each site being considered for the

proposed facility;

3.4.1.b.D. An estimate of the volume, type, and origin of solid waste to be handled at the proposed facility; ~~and~~

3.4.1.b.E. The period of time over which the investigative review of the site will be undertaken;

3.4.1.b.F. Other information required by the director; and

3.4.1.c. Provide a copy of the pre-siting notice to the appropriate county or regional solid waste authority, ~~or~~ county commission and/or other entities established pursuant to Chapter 22C, Article 4, Section 1 et seq. of the Code of West Virginia, as amended, according to the county or region in which the proposed facility is to be located, as required within five (5) days of the publication of the legal advertisement required under section 3.4.1.a of ~~these regulations~~ this rule.

3.4.2. The director, ~~at his discretion, may~~ must hold a public hearing on the ~~contents of the~~ pre-siting notice ~~if he receives information or public comment which warrants such a hearing.~~ in the area potentially affected.

3.4.2.a. The public hearing on the contents of the pre-siting notice ~~will~~ must be conducted in accordance with the provisions of section 3.23 of ~~these regulations~~ this rule.

3.4.2.b. The director may substitute the public hearing held by the county or regional solid waste authority during the county appraisal or county siting process for the hearing contemplated by section 3.4.2 of ~~these regulations~~ this rule.

3.4.3. Based on comments received at the public hearing or received in writing within ten (10) days following the public hearing, or upon recommendations received from the county, ~~or~~ regional solid waste authorities within ninety (90) days after their receipt of the pre-siting notice, the director may require the person who submitted that notice to furnish additional information on the siting of the proposed facility. Such additional information may include, but not be limited to, the following:

3.4.3.a. Impacts upon transportation facilities;

3.4.3.b. Impacts upon public water supplies;

3.4.3.c. Impact upon land use patterns;

3.4.3.d. Impacts upon agricultural, commercial and residential real estate values;

3.4.3.e. Impacts upon wildlife;

3.4.3.f. Impacts upon endangered or threatened species of animals or plants;

3.4.3.g. Impacts upon aesthetics;

3.4.3.h. Impacts upon socioeconomic conditions;

3.4.3.i. Impacts upon water resources; and

3.4.3.j. Other impacts as determined by the director.

3.5. Facility Permits.

3.5.1. Permit Required.

A permit must be obtained from the ~~chief~~ director prior to the installation, establishment, construction, modification, operation, or closure of any solid waste facility.

3.5.2. Single ~~Document~~ Permit. Permits issued pursuant to ~~these regulations~~ this rule ~~shall~~ must meet the requirements of W. Va. Code §§~~20-5A and 20-5F~~ 22-15 and 22-11, and all associated ~~regulations~~ rules as applicable so that ~~and~~ only one permit ~~document~~ for any solid waste facility will be issued by the ~~chief~~ director. The §22-11 portion of that single permit must also meet the requirements of the "Groundwater Protection Act" promulgated under §22-12-1 et seq., and any rules promulgated thereunder, as amended.

3.5.3. Term of Permit.

All permits issued pursuant to W. Va. Code §22-15 and ~~these regulations~~ this rule ~~shall~~ must have a fixed term not to exceed five (5) years from the date of issuance. The ~~chief~~ director may administratively extend any permit expiration date for a period of up to one (1) year.

3.5.4. Existing Permits. Any person who, on or after the effective date of ~~these regulations~~ this rule, holds a valid ~~Department~~ Division permit, or modifies or renews such permit to conduct a ~~commercial~~ solid waste activity must, upon notification by the director in writing, submit a request to the ~~chief~~ director for a minor modification of that permit, in accordance with the provisions of section 3.18 of ~~these regulations~~ this rule, so that the applicable provisions of ~~these regulations~~ this rule can be incorporated into the terms and conditions of the existing permit. The director may only require a minor modification of the facility permit if the statute "Solid Waste Management Act," this rule, orthe counterpart federal regulation is modified or amended. The permit modification request ~~shall~~ must be ~~completed no later than June 10, 1990.~~ submitted within ninety (90) days of the date of receipt of the notification of the director that they are required to comply with all requirements of §22-15-1 et seq., and this rule, as applicable.

3.5.5. Application Completeness. A complete permit application, including the background investigation disclosure statement, must consist of all applicable information as required for final permit approval by this rule that renders the application for a permit, renewal, modification, transfer or other permitting function to be both administratively and technically complete.

3.6. Permit Application Fees.

3.6.1. Each application for a solid waste facility permit, renewal,

modification, transfer or other permitting functions must be accompanied by a nonrefundable application fee in accordance with the schedule of fees in Appendix ~~A of~~ IV to this rule, ~~these regulations~~ as amended.

3.6.2. A fee equal to ten percent (10%) of the application fee listed in Appendix ~~A of these regulations~~ IV to this rule must accompany an ~~permit~~ application for any renewal, modification, transfer or other permitting functions refiled or that requires additional information due to substantial administrative or technical incompleteness.

3.7. Permit Application Requirements.

A permit ~~shall~~ must be obtained from the ~~chief~~ director prior to the installation, establishment, construction, modification, operation, or closure of any solid waste facility. Unless otherwise specified in ~~these regulations~~ this rule or on application forms prescribed by the director, all applications for a solid waste facility permit must include the following:

3.7.1. Forms and Number of Copies.

The application ~~shall~~ must be made on the forms prescribed by, and obtained from the ~~chief~~ director. Four (4) copies of the application, including all supporting documents, ~~shall~~ must be submitted to the director ~~chief~~; a fifth copy ~~shall~~ must be submitted to the applicable county, ~~or~~ regional solid waste authority for the area in which the proposed facility is, or will ~~to~~ be located.

3.7.2. Property Rights.

The application ~~shall~~ must provide ~~copies~~ a copy and a narrative description of the legal documents upon which the applicant's ~~bases his~~ legal right to enter and conduct solid waste operations is based ~~on~~ within the solid waste facility proposed permit area and whether that right is the subject of pending or current court litigation.

3.7.3. Certification.

All application documents related to engineering and design plans and specifications ~~shall~~ must be compiled, signed, and sealed by a professional engineer who is registered to practice in West Virginia.

3.7.4. Cover Letter.

The application ~~shall~~ must include a cover letter detailing the desired ~~Department~~ division action and/or response.

3.7.5. Table of Contents.

The application ~~shall~~ must include a table of contents listing all sections, visuals and attachments of the submittal.

3.7.6. Visuals.

The application ~~shall~~ must include appropriate maps, figures, photographs, and

tables to clarify information or conclusions. The visuals must be legible. All maps, plan sheets, drawings, isometrics, cross-sections, ~~and~~ aerial photographs and other attachments must ~~shall~~:

3.7.6.a. Be no smaller than eight and one-half inches by eleven inches (8-1/2" x 11") and, if larger, ~~shall~~ must be folded to eight and one-half inches by eleven inches (8-1/2" x 11");

3.7.6.b. Be of appropriate scale to show all required details in sufficient clarity;

3.7.6.c. Be numbered, referenced in the table of contents and narrative, titled, have a legend of all symbols used, ~~contain horizontal and vertical scales, where applicable,~~ and specify drafting or origination dates;

3.7.6.d. Use uniform horizontal and vertical scales;

3.7.6.e. Contain a north arrow;

3.7.6.f. Use USGS datum as a basis for all elevations;

3.7.6.g. Contain a survey grid with a maximum dimension of two hundred (200) feet square based on monuments established in the field which is referenced to state plane coordinates;

3.7.6.h. Show original topography and the grid system on plan sheets showing construction, operation, or closure topography; and

3.7.6.i. Show survey grid location and reference major plan sheets on all cross-sections. A reduced diagram of a cross-section location plan view map ~~shall~~ must be included on the sheets with the cross-section.

3.7.7. Quality Assurance and Quality Control Plans.

The application ~~shall~~ must include quality assurance and quality control (Q.A./Q.C.) plans to be implemented to assure conformity of the solid waste facility construction, environmental monitoring, ~~and~~ monitoring well development, and provisions for monitoring within applicable standards.

3.7.7.a. The Q.A./Q.C. plans ~~shall~~ must include a delineation of the quality assurance and quality control management organization, including the chain of command of the Q.A./Q.C. inspectors and contractors;

3.7.7.b. The Q.A./Q.C. plans ~~shall~~ must include a description of the required level of experience and training for the contractor, ~~his~~ the contractor's crew, and Q.A./Q.C. inspectors for every major phase of construction in sufficient detail to demonstrate that the installation methods and procedures required in ~~these regulations~~ this rule will be properly implemented; and

3.7.7.c. The Q.A./Q.C. plans ~~shall~~ must include a description of the quality assurance and quality control testing procedures for every major phase of construction. At a minimum, these Q.A./Q.C. ~~testing~~ procedures ~~shall~~ must include:

3.7.7.c.A. The frequency of field inspections, field testing, and frequency of sampling for laboratory testing;

3.7.7.c.B. The sampling and field testing procedures and any associated equipment to be utilized;

3.7.7.c.C. The calibration of field testing equipment;

3.7.7.c.D. The frequency of performance audits;

3.7.7.c.E. The sampling size;

3.7.7.c.F. The soils or geotechnical laboratory to be used;

3.7.7.c.G. The laboratory procedures to be utilized;

3.7.7.c.H. The calibration of laboratory equipment;

3.7.7.c.I. The laboratory's Q.A./Q.C. procedures;

3.7.7.c.J. The limits for test failure; and

3.7.7.c.K. A description of the corrective procedures to be used upon test failure; ~~and~~

3.7.7.d. The Q.A./Q.C. plans ~~shall~~ must include a description of the quality assurance and quality control sampling and analysis procedures. At a minimum, these Q.A./Q.C. procedures ~~shall~~ must encompass the sampling procedures and analyses of groundwater, surface water, soil, leachate, and gas required under ~~these regulations~~ this rule.

3.7.8. Technical Procedures.

All technical procedures used to investigate a solid waste facility ~~shall~~ must be the current standard procedures as specified by the American Society for Testing Materials or by the United States Geological Survey or other equivalent, appropriate methods approved by the ~~chief~~ director.

3.7.8.a. All technical data submitted in the application ~~shall~~ must be accompanied by the names of person(s) and/or organization(s) that collected and/or analyzed the data, the dates of the collection, dates of analyses, ~~and~~ an analysis of the data, ~~and~~ a description of the methodology used to collect and analyze the data, and the chain of custody of any sample taken for analyses.

3.7.9. Endangered Species and Historic Sites.

The application ~~shall~~ must include a letter from the ~~Department's~~ Division of Natural Resources' Section of Wildlife Resources addressing the ~~known~~ presence of any endangered or threatened species of animals or plants in the vicinity of the proposed facility. The application ~~shall~~ must also include a letter from the West Virginia ~~Department~~ Division of Culture and History addressing the presence of any ~~known~~ historical, scientific, or archaeological areas in the vicinity of the proposed facility.

3.7.10. Bonding and Financial Assurance.

Sufficient bond or other type of financial assurance ~~shall~~ must be submitted to the ~~Department~~ Division in compliance with the provisions of section 3.13 of ~~these regulations~~ this rule.

3.7.10.a. The permittee must maintain copies of any required closure, post-closure and corrective action cost estimates in the operating record. A copy of the estimate, or the estimate as amended, must be approved by the director prior to the placement of the estimate in the operating record.

3.7.11. Background Investigation Disclosure Statement.
The background investigation disclosure statement ~~application~~ for a solid waste facility permit ~~shall~~ must include the name of the applicant or any officer, director, or manager thereof; shareholder owning five percent (5%) or more of its capital stock, beneficial or otherwise; or other person conducting or managing the affairs of the applicant or the proposed ~~licensed premises~~ facility and must be submitted to the director in compliance with section 3.14 of ~~these regulations~~ this rule.

3.7.12. Facility Expansion.

In an application for an expansion of an existing facility, the effectiveness of the existing design and operation ~~shall~~ must be discussed. An evaluation of relevant monitoring data and a discussion of all plan modifications and remedial actions ~~shall~~ must be included in the application. Any significant adverse impacts to the waters of the State or to any endangered or threatened species of animal or plant that could result from the expansion ~~shall~~ must also be noted and discussed.

3.7.13. Waste Reduction and Recovery Information.

The application ~~shall~~ must include a discussion of the alternatives to the facility, as well as a description of any waste reduction incentives and recycling services to be instituted or provided with the proposed facility as contained in section 3.7.13 of ~~these regulations~~ this rule.

3.7.13.a. Waste Types, Origins, and Quantities.

The application ~~shall~~ must include a brief description of the types, origins, and quantities of household, commercial, industrial, construction/demolition, and other wastes anticipated to be accepted at the existing or proposed facility and a calculation of waste quantities by composition based on state-estimated figures or other data if readily available.

3.7.13.b. Description of Technologies.

The application ~~shall~~ must include a brief description of the technologies and methodologies of waste reduction, reuse, recycling, composting and energy recovery as applicable to the wastes anticipated to be accepted at the proposed facility.

3.7.13.c. Ongoing Program.

The application ~~shall~~ must include a brief description of any known waste reduction or recovery programs in the area to be served by the proposed facility that handle the types of waste anticipated to be accepted at the existing or proposed facility, including a description of their potential for expansion.

3.7.13.d. Recommendations.

The application ~~shall~~ must include a brief description of any recommendations for waste reduction and recovery in approved area-wide solid waste management plans for all counties in the area to be served by the proposed facility.

3.7.13.e. Current Studies.

The application ~~shall~~ must include a brief description of any ~~known~~ waste reduction or recovery studies being conducted for wastes anticipated to be accepted at the proposed facility.

3.7.13.f. Available Recovery Markets.

The application ~~shall~~ must include a description of the nearest available markets for recoverable material from the waste anticipated to be accepted at the proposed facility including:

3.7.13.f.A. Market name and address;

3.7.13.f.B. Market requirements for minimum quantities and preparation for deliverable material; and

3.7.13.f.C. Prices paid for materials, including both current prices and ranges for the past three (3) years, if available ~~to the public~~.

3.7.13.g. Potential Energy Markets.

The application ~~shall~~ must include a brief description of energy users within the service area capable of using at least twenty-five percent (25%) of the energy available in the waste stream anticipated at the proposed facility or for the energy available from a minimum of twenty-five (25) tons of waste per day, whichever is greater. At a minimum, consideration must be given to both electrical generation and to steam production.

3.7.13.h. Future Effects.

The application ~~shall~~ must include a brief description of any efforts to be implemented to either assist in the expansion of existing waste reduction and recovery programs or to develop new programs for waste reduction and recovery.

3.7.14. Geotechnical Information.

The application ~~shall~~ must include an analysis of the geologic, hydrogeologic, topographic, and hydrologic features of the facility site that may be favorable or unfavorable for facility development in compliance with the requirements of section 3.8 of ~~these regulations~~ this rule.

3.7.15. Identification and Characterization of Potential Borrow Sources.

The application ~~shall~~ must include an identification and characterization of the potential borrow sources as detailed in section 3.12 of ~~these regulations~~ this rule.

3.7.16. Proposed Design and Operation.

The application ~~shall~~ must include a proposed design based on conclusions outlined in the construction design section of the application as designated in section 3.10 of ~~these regulations~~ this rule. A general discussion of the proposed operating procedures must also be included.

3.7.17. Landfill Liners.

The application ~~shall~~ must include plans, drawings, cross-sections, and specifications for a liner system as designated in section 3.11 of ~~these regulations~~ this rule.

3.7.18. Verification of Application.

The application ~~shall~~ must include a notarized signature of a principal officer, or ranking public official, verifying that the information contained in the application is true, complete and accurate ~~correct~~ to the best of that individual's knowledge and belief, based upon inquiry.

3.8. General Geologic and Hydrologic Submission Requirements.

3.8.1. Site Information.

The application ~~shall~~ must include the following information regarding the potential site:

3.8.1.a. Total acres of ~~site~~ area permitted, or to be permitted;

3.8.1.b. Total acres of disposal area;

3.8.1.c. Planned life of facility;

3.8.1.d. Previous existence or present activities of ~~a~~ mines or quarries~~y~~ at the site;

3.8.1.e. A 7.5 minute USGS topographic map, or an eight and one-half inch by eleven inch (8-1/2" x 11") copy of a portion thereof, showing:

3.8.1.e.A. The site and its boundaries;

3.8.1.e.B. The area surrounding the site for at least fifteen hundred (1,500) feet beyond the site boundaries;

3.8.1.e.C. The name of the USGS quadrangle;

3.8.1.e.D. The date of last USGS map revision;

3.8.1.e.E. The latitude and longitude of the center of the disposal area ~~site~~; and

3.8.1.e.F. The location of the items listed in section 3.8.1.1 of ~~these regulations~~ this rule, unless such items are instead shown on the large-scale map;

3.8.1.f. A description of the site location;

3.8.1.g. A description of the site terrain;

3.8.1.h. A description of any title, deed, or usage restrictions affecting the proposed permit area;

3.8.1.i. The name of the town nearest to the site;

3.8.1.j. The name of the county, or counties in which the site is, or will be located;

3.8.1.k. A large-scale map -- with a minimum scale of one inch equal to two hundred feet (1 inch = 200 feet) and a maximum contour interval of ten (10) feet -- showing the location of the items listed in section 3.8.1.1 of ~~these regulations~~ this rule, unless such items are instead shown on the 7.5 minute topographic map;

3.8.1.l. Map Inclusions All of the following which occur either within the site boundaries or within fifteen hundred (1,500) feet of the site boundaries or within the distances specified in sections 3.1 and 3.2 of this rule must be indicated on the large-scale map or the 7.5 minute topographic map or both;

3.8.1.l.A. Water supply wells;

3.8.1.l.B. Springs;

3.8.1.l.C. Natural Wetlands (e.g., swamps, bogs, marshes);

3.8.1.l.D. Streams;

3.8.1.l.E. Public water supplies;

3.8.1.l.F. Other bodies of water;

3.8.1.l.G. Underground and ~~or~~ surface mines (for underground mines, also indicate the subsidence angle of draw, as applicable);

3.8.1.l.H. Mine pool(s) and point(s) of discharge~~s~~;

3.8.1.l.I. Mine refuse spoil piles, and any impoundment capabilities;

3.8.1.l.J. Quarries or sand and gravel pits;

3.8.1.l.K. Gas and oil wells;

3.8.1.1.L. Surface and groundwater quality monitoring points;

3.8.1.1.M. Occupied or habitable dwellings;

3.8.1.1.N. Roads;

3.8.1.1.O. Power lines, ~~and~~ pipelines and other utilities;

3.8.1.1.P. Public buildings;

3.8.1.1.Q. Sinkholes;

3.8.1.1.R. Property boundaries;

3.8.1.1.S. Owners of record both surface and subsurface;

3.8.1.1.T. Easements or right-of-ways; and

3.8.1.1.U. One hundred (100) year floodplain boundary.

3.8.1.1.V. All areas prohibited by section 3.1 of this rule, or for which location standards have been established by section 3.2 of this rule.

3.8.2. Soils Information.

Backhoe test pits or drilled test borings ~~shall~~ must be employed to determine soil types, characteristics, and conditions. A minimum of four (4) test pits or borings for the first ten (10) or less acres and one (1) test pit or boring for each additional ten (10) or less acres must be excavated or drilled on a uniform grid pattern across ~~the site~~ each proposed disposal area and each proposed borrow source. Test pits or borings for ~~Class F~~ all ~~S~~ solid ~~W~~ waste ~~F~~ facilities ~~shall~~ must be located so as to identify all soil types distributed over the site. The applicant ~~shall~~ must provide the following:

3.8.2.a. A list of each soil series and phase present on the site and each borrow source and soil maps with site and borrow source boundaries as an attachment;

3.8.2.b. The soil maps must show the locations of all test pits or borings made to describe soils and determine their depth;

3.8.2.c. A description of soil horizons containing seventy-five percent (75%) or more coarse fragments (as per the Unified Soil Classification System) including:

3.8.2.c.A. Minimum thickness of soil to horizons with seventy-five percent (75%) or more coarse fragments;

3.8.2.c.B. Soil thickness determination procedures; and

3.8.2.c.C. Degree of weathering of coarse fragments.

3.8.2.d. Test pit or excavation descriptions including depth to all

horizons, color, texture, structure, consistence, depth to and color of any mottles;

3.8.2.e. Results of laboratory analyses of soil samples taken from test pits or borings including analyses for grain size, pH, permeability, and Atterberg limits for predominate soil types; and

3.8.2.f. A description of the following general soil characteristics;

3.8.2.f.A. Drainage characteristics of soil;

3.8.2.f.B. Maximum slopes at the proposed site; and

3.8.2.f.C. Shallowest depth from surface to mottling.

3.8.2.g. A minimum of four (4) representative samples for the first ten (10) or less acres and one (1) additional sample for each additional ten (10) or less acres must be tested for the relationship of water content to dry density using either the Modified or Standard Proctor method. Each Proctor curve must be developed with a minimum of five (5) points.

3.8.2.h. A minimum of twenty percent (20%) of the samples used to develop the Proctor curves must be used to evaluate soil permeability. This evaluation must be accomplished by determining the maximum density and optimum moisture through a Proctor test (D-698) and then testing for permeability at a dry density between ninety-five percent (95%) and one hundred percent (100%) of the maximum and within four percent (4%) of optimum moisture.

3.8.3. Site Geological Information.

A minimum of four (4) test corings ~~shall~~ must be performed at any landfill site with a permitted surface area of ten (10) or less acres and one (1) additional test coring performed for each additional five (5) acres up to one hundred fifty (150) acres, not to exceed fifteen (15) holes. Any acreage over one hundred fifty (150) acres ~~shall~~ must require one (1) additional test coring per ten (10) or less acres. Such test corings ~~shall~~ must be distributed over the entire site area to give an accurate description of subsurface conditions for the area of the site which is intended for use as a landfill. The depth at which coreholes ~~shall~~ must terminate ~~shall~~ must be determined by the following: the first coring ~~shall~~ must be placed in the lowest point of the proposed disturbed area and cored to the uppermost significant aquifer that is to be monitored or corings ~~shall~~ must penetrate to a minimum depth of one hundred (100) feet in the absence of the aquifer. Upon the completion of drilling, drilling logs for all completed coreholes ~~shall~~ must be submitted to the ~~chief~~ director.

3.8.3.a. The site geological analysis ~~should~~ must provide the following information:

3.8.3.a.A. Sediments.

3.8.3.a.A.(a) A notation of the presence of any sedimentary deposits under the proposed site including, but not limited to, colluvial,

alluvial, or lacustrine;

3.8.3.a.A.(b) A description of the type and texture of unconsolidated materials;

3.8.3.a.A.(c) The thickness of unconsolidated materials including the maximum, minimum, and how the thickness was determined procedurally; and

3.8.3.a.A.(d) A description of the different formations of unconsolidated materials and the effects of these sediments on potential discharges from the landfill;

3.8.3.a.B. Bedrock.

3.8.3.a.B.(a) The formations and names;

3.8.3.a.B.(b) The lithologies including major lithologic names in the area (e.g., Morgantown, Sandstone, Ames Limestone) must be plotted on the large-scale map;

3.8.3.a.B.(c) An indication of all areas where bedrock outcrops within the site and also within fifteen hundred (1,500) feet of the site boundaries on the large-scale map;

3.8.3.a.B.(d) A characterization of the degree of bedrock weathering;

3.8.3.a.B.(e) The shallowest depth from surface to bedrock; and

3.8.3.a.B.(f) For carbonate rock, show any undrained depressions or sinkholes existent on-site or within fifteen hundred (1,500) feet of the site shown on the large-scale map or the 7.5 minute topographic map or both;

3.8.3.a.C. Structure.

3.8.3.a.C.(a) An indication of all of the following types of fracture zones on-site and within fifteen hundred (1,500) feet of the site boundaries on the large-scale map or the 7.5 minute topographic map or both:

3.8.3.a.C.(a)(A) Traces;

3.8.3.a.C.(a)(B) Lineaments;

3.8.3.a.C.(a)(C) Joints; and

3.8.3.a.C.(a)(D) Faults.

3.8.3.a.C.(b) A ~~brief~~ description of the influence that these fracture zones have on the movement of infiltrated water and groundwater;

3.8.3.a.C.(c) A description of the regional bedrock structures

in the area of the site;

3.8.3.a.C.(d) A detailed description of the local bedrock structure. Applicants must construct a structural geologic map with a scale of one inch equal to two hundred feet (1 inch = 200 feet) using the structural contour intervals. For bedrock dip at angles of zero to five degrees, contour intervals ~~shall~~ must be five (5) feet; for angles of five to thirty degrees, contour intervals ~~shall~~ must be ten (10) feet; and for angles of greater than thirty (30) degrees, contour intervals ~~shall~~ must be twenty-five (25) feet. The use of intermediate contours in areas of low structural relief for greater detail is required;

3.8.3.a.C.(e) A description of folding as it applies to the site including strike and plunge of fold axis and location of the site in relation to the local structure;

3.8.3.a.C.(f) The strike and dip of bedding planes;

3.8.3.a.C.(g) A description of the joints and fractures including strike, dip, and open joints and a description of the spacing of the joints;

3.8.3.a.C.(h) A description of all faults located on or within fifteen hundred (1,500) feet of the site boundaries including the strike and dip of faults and an indication of all faults in the area of the site on a map; and

3.8.3.a.C.(I) A minimum of two (2) geologic profiles using bedrock outcrops and corehole information including the vertical exaggeration to adequately illustrate the geology of the site; ~~and~~

3.8.3.a.D. Mining.

3.8.3.a.D.(a) A notation of the presence of any abandoned, reclaimed, active, and/~~or~~ inactive surface mines on the site;

3.8.3.a.D.(b) A list of any extractable coal seams beneath the site;

3.8.3.a.D.(c) Any abandoned, reclaimed, active or inactive ~~deep~~ underground mines located on-site or within fifteen hundred (1,500) feet of the site boundaries including minimum depth to mined area, aerial extent of mined area as shown, and type of minerals mined (If coal, give the names of seams.); and

3.8.3.a.D.(d) Any mine maps ~~or~~ and related information for mined areas under the site or within fifteen hundred (1,500) feet of the site boundaries.

3.8.4. Hydrologic Information. The permittee must install a groundwater monitoring system that consists of a sufficient number of wells (a minimum of four (4)) monitoring wells must ~~shall be drilled to intersect~~ be installed at appropriate locations and depths, to yield groundwater samples from the uppermost significant aquifer or the uppermost aquifer at all

landfill sites. Monitoring wells -- one (1) upgradient and three (3) downgradient -- ~~shall~~ must monitor the same aquifer. If previously drilled geologic corings are to be used as monitoring wells and the uppermost significant aquifer has been drilled through, then those holes proposed to monitor groundwater ~~may~~ must be plugged from the bottom of the hole to the uppermost significant aquifer with a sodium bentonite grout, then properly screened and cased.

3.8.4.a. Groundwater monitoring wells ~~shall~~ must meet the following specifications:

3.8.4.a.A. All monitoring well casings and screens ~~shall~~ must be constructed of a minimum of two (2) inch (inner diameter) Schedule 40 polyvinyl chloride (PVC) plastic pipe, or other casing satisfactory to the ~~chief~~ director. Lengths of pipe ~~shall~~ must be joined using threaded couplings. Solvent cement must not be used for PVC couplings. Borehole diameter ~~shall~~ must be a minimum of six (6) inches larger than the PVC casing. If approved by the director, the borehole diameter may be smaller if proven methods are employed to facilitate the emplacement of the filter pack and annular sealant.

3.8.4.a.B. The screened interval for monitoring wells ~~shall~~ must consist of a minimum of ten (10) to a maximum of twenty (20) feet of properly sized, preconstructed, commercially available well screen of the same material and diameter as the casing, or screen as approved by the ~~chief~~ director. The screen is to have a slot size to enable retainment of eighty-five to one hundred percent (85%-100%) of the filter pack material. The bottom of the screen ~~shall~~ must be capped. Should the uppermost aquifer thickness exceed twenty (20) feet or be comprised of several hydraulically connected formations, then a cluster of wells or some other type of multiple zone monitoring system may be required at the discretion of the ~~chief~~ director.

3.8.4.a.C. All wells ~~shall~~ must be sand or gravel-packed (depending on screen size) from the base of the well to a level a minimum of two (2) feet and a maximum of five (5) feet above the top of the screen. An impervious two (2) foot or greater bentonite seal ~~shall~~ must be installed on top of the gravel packing.

3.8.4.a.D. All wells ~~shall~~ must be continuously grouted from the top of the impervious seal to above the groundwater table. Wells ~~shall~~ must not be grouted with cement below the potentiometric surface of the uppermost significant aquifer.

3.8.4.a.E. From below the frost line, the cap ~~shall~~ must be composed of concrete (using expanding cement) blending into a four (4) inch thick apron extending three (3) feet or more from the outer edge of the borehole.

3.8.4.a.F. Upon completion, all wells ~~shall~~ must be fully developed and pumped to determine the yield of the well.

3.8.4.a.G. The elevation of the top of the well casing ~~shall~~ must be two (2) to three (3) feet above the elevation of the ground surface.

3.8.4.a.H. All wells ~~shall~~ must be properly tagged with permit number, top of casing elevation, well number, and flagged or otherwise made visible so they can be readily located in the field, and avoided by onsite heavy equipment. A survey mark must be placed on the top of the casing at the point utilized for determining elevation.

3.8.4.a.I. All wells ~~shall~~ must be provided with a means of protection from tampering, vandalism, or damage. At a minimum, protection must be provided by a lockable outer well cap.

3.8.4.a.J. In addition to the requirements of section 3.8.4. of this rule, the monitoring system must be installed at appropriate locations and depths, to yield ground-water samples from the uppermost aquifer that:

3.8.4.a.J.(a) Represent the quality of background groundwater that has not been affected by leakage from a SWLF.

3.8.4.a.J.(b) A determination of the background quality may include sampling of wells that are not hydraulically upgradient of the waste management area where:

3.8.4.a.J.(b)(A) Hydrogeologic conditions do not allow the permittee to determine what wells are hydraulically upgradient; or

3.8.4.a.J.(b)(B) Sampling of other wells will provide an indication of the background groundwater quality that is as representative or more representative than that provided by the upgradient wells; and

3.8.4.a.J.(b)(C) Represent a quality of groundwater passing the relevant point of compliance specified by the director under section 4.5.4.a.G of this rule.

3.8.4.a.J.(b)(D) The downgradient monitoring system must be installed at the relevant point of compliance specified by the director under section 4.5.4.a.G of this rule that ensures detection of groundwater contamination in the uppermost aquifer.

3.8.4.a.J.(b)(E) When physical obstacles preclude installation of groundwater monitoring wells at the relevant point of compliance at existing SWLFs, the downgradient monitoring system may be installed at the closest practicable distance hydraulically downgradient from the relevant point of compliance specified by the director that ensure detection of groundwater contamination in the uppermost aquifer.

3.8.4.a.K. The permittee may request the director to approve a multi-unit groundwater monitoring system instead of separate groundwater monitoring systems for each SWLF when the facility has several SWLFs, provided the multi-unit groundwater system meets the requirements of section 3.8.4 of this rule and will be as protective of human health and the environment as individual monitoring systems for each SWLF, based on the permittees' compliance with the following factors:

3.8.4.a.K.(a) Number, spacing, and orientation of the SWLFs;

3.8.4.a.K.(b) Hydrogeologic setting;

3.8.4.a.K.(c) Site history;

3.8.4.a.K.(d) Engineering design of the SWLFs, and

3.8.4.a.K.(e) Type of waste accepted at the SWLFs.

3.8.4.a.L. Monitoring Well Casing Requirements. Monitoring wells must be cased in a manner that maintains the integrity of the monitoring well bore hole. This casing must be screened or perforated and packed with gravel or sand, where necessary, to enable collection of groundwater samples. The annular space (i.e., the space between the bore hole and well casing) above the sampling depth must be sealed to prevent contamination of samples and the groundwater.

3.8.4.a.L.(a) The permittee must notify the director that the design, installation, development, and decommission of any monitoring wells, peizometers and other measurement, sampling, and analytical devices documentation has been placed in the operating record; and

3.8.4.a.L.(b) The monitoring wells, peizometers, and other measurement, sampling, and analytical devices must be operated and maintained so that they perform to design specifications throughout the life of the monitoring program.

3.8.4.a.M. The number, spacing, and depths of monitoring systems must be:

3.8.4.a.M.(a) Determined based upon site-specific technical information that must include through characterization of:

3.8.4.a.M.(a)(A) Aquifer thickness, groundwater flow rate, groundwater flow direction including seasonal and temporal fluctuations in groundwater flow; and

3.8.4.a.M.(a)(B) Saturated and unsaturated geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer, and materials comprising the confining unit defining the lower boundary of the uppermost aquifer; including, but not limited to: thicknesses, stratigraphy, lithology, hydraulic conductivities, porosities and effective porosities.

3.8.4.a.M.(b) Certified by a qualified groundwater scientist and approved in writing by the director.

3.8.4.a.M.(b)(A) Within fourteen (14) days of this certification, the permittee must notify the director that the certification has been placed in the operating record.

3.8.4.b. Well Drilling.

The method used to drill the groundwater monitoring wells ~~shall~~ must be described in the application. The latitude and longitude of each well to

within plus or minus one second and the USGS datum elevation of the top of each well ~~shall~~ must be included in the application.

3.8.4.c. Water Table.

The maximum and minimum depth to the zone of saturation ~~shall~~ must be included in the application, along with the following:

3.8.4.c.A. Seasonal water table fluctuations at the above locations and seeps and springs affected by seasonal changes ~~shall~~ must be described in the application and the source of information must be referenced;

3.8.4.c.B. Perched or special water table conditions ~~shall~~ must be described in the application;

3.8.4.c.C. The minimum depth to a perched water table ~~shall~~ must be provided in the application.

3.8.4.c.D. The occurrence of groundwater drainage to ~~deep~~ underground mines ~~shall~~ must be determined and, if found, mine discharges must be identified on the large-scale map or the 7.5 minute topographic map or both, as required under section 3.8.1.1 of ~~these regulations~~ this rule.

3.8.4.d. Groundwater Movement.

3.8.4.d.A. A large-scale map (1 inch = 200 feet) showing all groundwater flow directions ~~shall~~ must be constructed and included in the application. The water table/potentiometric surface ~~shall~~ must be contoured on this map using an appropriate contour interval.

3.8.4.d.B. The approximate rate of groundwater flow and the method used to determine that rate of flow ~~shall~~ must be provided in the application.

3.8.4.d.C. The method used to determine groundwater flow directions ~~shall~~ must be included in the application.

3.8.4.d.D. The location of all groundwater discharge points related to the site ~~shall~~ must be shown on the large-scale map required under section 3.8.4.d.A of ~~these regulations~~ this rule.

3.8.4.d.E. If the site is in a groundwater discharge or recharge zone, this fact ~~shall~~ must be noted in the application.

3.8.4.d.F. The rate of groundwater flow at the site and its effects on the operation of the proposed facility ~~shall~~ must be discussed in the application.

3.8.4.e. Groundwater Quality Analyses.

The method of sampling; date and results of the analyses of the water sampled from each groundwater monitoring well at the site ~~shall~~ must be provided in the application. All sampling procedures must be included in the application and approved by the ~~chief~~ director. Analyses for the constituents listed in

Appendix I; the facility permit; or an order by the director ~~following parameters shall be conducted: alkalinity, ammonia nitrogen, arsenic, barium, bicarbonate, biochemical oxygen demand (BOD 5 day), cadmium, calcium, chemical oxygen demand (COD), chlorides, chromium, free cyanide, iron, lead, dissolved manganese, magnesium, mercury, nickel, nitrate, pH, potassium, selenium, silver, sodium, sulfate, total dissolved solids (TDS), total organic compounds (TOC), total phenolic materials, zinc,~~ and any other parameter(s) specified by the ~~chief~~ director in writing must be conducted.

~~3.8.4.e.A. The monitoring parameters listed in Section 3.8.4.e. of these regulations shall be reported as total metals unless otherwise specified by the chief.~~

3.8.4.f. Surface Water.

3.8.4.f.A. The name of the nearest stream to the site and its 7Q10 low flow ~~shall~~ must be included in the application.

Note: "7Q10" means the seven (7) consecutive day drought flow with a ten (10) year return frequency, as defined in section 2 of this rule.

3.8.4.f.B. The surface drainage area of the tributary on which the site is located ~~shall~~ must be plotted on a map and included in the application.

3.8.4.f.C. The estimated peak surface water drainage flow of the tributary on which the site is located for a 25-year, 24-hour storm ~~rainfall event shall~~ must be included in the application.

3.8.4.f.D. The maximum and minimum of surface slopes of the tributary on which the site is located ~~shall~~ must be included in the application.

3.8.4.f.E. The results of an analysis of water from one (1) grab sample from the nearest stream to the site ~~shall~~ must be included in the application. This analysis ~~shall~~ must be performed for the same parameters ~~listed~~ referenced in section 3.8.4.e ~~and 3.8.4.e.A~~ of ~~these regulations~~ this rule with the addition of total suspended solids.

3.8.5. Water Budget.

A water budget ~~shall~~ must be prepared for the periods of time during active operations, when the maximum amount of area has been filled but not capped, and following facility closure at any landfill site. At a minimum, the following factors must be considered in the preparation of the water budget:

3.8.5.a. Average monthly temperature;

3.8.5.b. Average monthly precipitation;

3.8.5.c. Evaporation;

3.8.5.d. Evapotranspiration;

3.8.5.e. Surface slope and topsoil texture;

3.8.5.f. Soil moisture holding capacity and root zone depth;

3.8.5.g. Runoff coefficients;

3.8.5.h. Moisture contribution from the waste; and

3.8.5.i. Any groundwater contribution.

3.8.6. Liners and Leachate Collection System Efficiency.

The collection efficiency of the leachate collection system at the landfill ~~shall~~ must be calculated using an approved analytical or numerical method. The factors to be considered in the calculation of collection efficiency must include:

3.8.6.a. The saturated hydraulic conductivity of the liner;

3.8.6.b. Liner thickness;

3.8.6.c. The saturated hydraulic conductivity of the drainage blanket;

3.8.6.d. Drainage blanket porosity;

3.8.6.e. The base slope of the liner;

3.8.6.f. The maximum flow distance across the liner;

3.8.6.g. Annual infiltration; and

3.8.6.h. Any groundwater inflow.

3.8.7. Leachate Generation.

Information gained from the collection efficiency calculations ~~shall~~ must be used to predict the daily volume of leachate collected from the landfill.

3.8.8. Waste and Leachate Characterization.

3.8.8.a. Industrial Wastes.

Unless otherwise approved, the physical and chemical characteristics of all wastes and leachates ~~shall~~ must be analyzed and described. When more than one waste is generated, testing shall be performed on each waste stream. All leaching tests ~~shall~~ must be done in accordance with published test procedures. Physical tests ~~shall~~ must be done in accordance with ASTM standards or published test procedures. All testing procedures ~~shall~~ must be documented. The proposed testing program -- including the leaching test method, the leaching media, the parameters to be analyzed for, and the detection limits for each parameter specified -- ~~should~~ must be discussed with the director ~~chief~~ prior to initiation of the work. Actual field leachate data may be substituted for chemical characterization data of the waste at

facilities for the disposal of industrial wastes, but only if approved in writing by the director ~~chief~~.

3.8.8.b. Municipal Wastes.

Actual field leachate data from existing facilities of similar size, design, and waste type or an estimate of the anticipated leachate quality available from other sources ~~shall~~ must be included for all facilities for the disposal of municipal solid waste.

3.8.9. Liquid and Non-Liquid Waste Storage.

All solid waste storage tanks, containers, liquid waste storage tanks and surface impoundments located at solid waste facilities are subject to regulation under section 3.8.9 of ~~these regulations~~ this rule.

3.8.9.a. An application for a permit to construct and operate a solid waste facility which includes a waste storage area must contain the following:

3.8.9.a.A. A description of the non-liquid or liquid waste to be stored;

3.8.9.a.B. The estimated volume of the non-liquid or liquid waste generated and a proposed recordkeeping system to record actual quantities stored;

3.8.9.a.C. A schedule of stored waste removal;

3.8.9.a.D. A description of the final treatment and disposal of the stored waste; and

3.8.9.a.E. A description of the storage facility design.

3.9. Existing Land Use and Environmental Assessment.

3.9.1. Land Use Information.

The application ~~shall~~ must discuss the present and former land uses at the facility and the surrounding area. A thorough discussion of land uses which may have an impact upon the suitability of the property for waste disposal or affected groundwater quality ~~shall~~ must be included in the application. The application ~~shall~~ must address all areas that may affect or be affected by the proposed facility; at a minimum, this will be the area within one (1) mile of the permit area for Class A solid waste facilities and within one-half (½) mile of the permit area for all other facilities. The presentation of land use information in the application ~~shall~~ must be supplemented with land use maps and, at a minimum, ~~shall~~ must specifically address the following:

3.9.1.a. Adjacent Landowners.

The identity and location of the adjacent landowners must be ~~determined~~ discussed in narrative form. This information may be presented on a plat map but must ~~check~~ reflect current ownership conditions and ~~note~~ any changes~~.~~ must be so noted;

3.9.1.b. Land Use Zoning.

The application ~~shall~~ must provide a review of land use zoning in the area and give particular attention to areas where zoning variances will be required, where agricultural impact statements may be required, or where floodplain, river corridors, or natural wetlands are designated.

3.9.1.c. Documentation of Present Land Uses.

The application ~~shall~~ must include a description of the present land use in the area. Particular emphasis ~~shall~~ must be placed on the discussion of known recreational, historical, archaeological, or environmentally unique areas. The application ~~shall~~ must include a letter from the ~~Department's~~ Division's Section of Wildlife Resources addressing the ~~known~~ presence of any endangered or threatened species of animal or plant in the vicinity of the proposed facility. The application ~~shall~~ must include a letter from the West Virginia ~~Department~~ Division of Culture and History addressing the presence of any ~~known~~ historical, scientific, or archaeological areas in the vicinity of the proposed facility. The need for an archaeological survey of the proposed limits of waste fill prior to development ~~shall~~ must also be addressed in the application.

3.9.1.d. Transportation and Access.

Present and proposed transportation routes and access roads, including any weight restrictions, ~~shall~~ must be delineated in the application.

3.9.2. Environmental Review.

The application ~~shall~~ must include an environmental assessment section which addresses the following items:

3.9.2.a. Project Summary. The application ~~shall~~ must include a brief summary of the project, with particular attention given to the following:

3.9.2.a.A. The purpose and need for the proposed facility including the history and background ~~on~~ of the project;

3.9.2.a.B. A listing of the statutory authority and other relevant local, state, and federal permits or approvals required for the proposed facility as well as a discussion of the need for exemptions, zoning changes, and any other special permits; and

3.9.2.a.C. The estimated cost and funding source for the facility.

3.9.2.b. Proposed Physical Changes.

The application ~~shall~~ must include a brief description of the proposed physical changes that will result from the project, with particular attention given to the following:

3.9.2.b.A. The changes in terrestrial resources including the

quantity of material to be excavated and the lateral extent of soil removal. This discussion must also cover the quantity and source of materials to be imported for construction of the liner, final cover system, drainage blanket and perimeter berms. Any other significant terrestrial modifications such as soil placement necessary to reach the proposed sub-base grades, construction of access roads, surface water drainage features, and sedimentation controls must also be outlined;

3.9.2.b.B. The changes in aquatic resources including the potential impacts to streams, existing wetlands, lakes, and drainage basin. This discussion must include discharge rates and volumes for groundwater control structures, leachate collection systems, and surface water runoff under existing conditions as well as that anticipated during active operation and following closure of the facility;

3.9.2.b.C. Buildings, treatment units, roads, and other structures to be constructed in conjunction with the facility. This discussion must include the size of the facilities and the number of miles of road to be constructed;

3.9.2.b.D. Emissions and discharges such as dust, diesel exhaust, odors, gases, leachate, surface water runoff, and collected groundwater associated with facility preparation, construction, operation, closure, and following closure of the facility;

3.9.2.b.E. Other changes anticipated with facility development; and

3.9.2.b.F. Maps, plans, and other descriptive material to clarify the discussion such as a county map showing the general area of the project, a USGS topographic map, a plat map, zoning map, county natural wetlands map, and a facility development plan.

3.9.2.c. Existing Environment.

The application ~~shall~~ must include a brief description of the existing environment that may be affected by the project, with particular attention given to the following:

3.9.2.c.A. The physical environment including the regional and local topography, geology, surface water drainage features, hydrogeologic conditions, air, natural wetlands, and earth borrow sources as well as an evaluation of the groundwater quality data and overall performance of any existing solid waste facility;

3.9.2.c.B. The dominant aquatic and terrestrial plant and animal species and habitats found in the area including any threatened or endangered species and the amount, type, and hydraulic value of natural wetlands;

3.9.2.c.C. Land use information including dominant features and zoning in the area;

3.9.2.c.D. Social and economic conditions including any ethnic or cultural groups;

3.9.2.c.E. Other special resources such as archaeological, historical, state natural areas, and prime agricultural lands; and

3.9.2.c.F. Public and private drinking water supplies.

3.9.2.d. Environmental Consequences.

The application ~~shall~~ must include a brief discussion of the probable adverse and beneficial impacts of the project, including primary, indirect, and secondary impacts, with particular attention given to the following:

3.9.2.d.A. The physical impacts which would be associated with facility design, construction, and operation, including visual impacts if applicable;

3.9.2.d.B. The biological impacts including destruction and creation of habitat, alteration of the physical environment and any impacts to endangered or threatened species;

3.9.2.d.C. The impacts on land use;

3.9.2.d.D. The social and economic impacts to local residents, cultural groups, and the communities and industries served by the facility;

3.9.2.d.E. Other special resources such as archaeological, historical, state natural areas, and prime agricultural lands; and

3.9.2.d.F. Probable adverse impacts that cannot be avoided including groundwater and surface water impacts, modifications of topography and any borrow source limitations on development around the facility, any loss of agricultural or forest land, displacement of wildlife, and adverse aesthetic impacts for people in and around the facility.

3.10. Proposed Landfill Design.

3.10.1. Report Preparation. The application ~~shall~~ must include a report describing the proposed landfill design. At a minimum, this report ~~shall~~ must include the following:

3.10.1.a. Preliminary materials balance calculations, including sources for berms, liner, final cover system, drainage blanket, topsoil, daily and intermediate cover, and any other fill needed to construct the facility;

3.10.1.b. The proposed methods for leachate and gas control including collection, containment, and treatment. The capability of the wastewater treatment plants to accept leachate must be discussed and an identification made of the wastewater treatment plants the applicant is negotiating with to accept the leachate, if the plant is not directly controlled by the applicant;

3.10.1.c. The proposed operating procedures including the method of facility development, filling sequence, access control for each phase, surface water control, waste screening, covering frequency, as applicable, exclusion of hazardous wastes and other special design features;

3.10.1.d. A description of the proposed groundwater, leachate, surface water, gas, air, unsaturated zone, and other monitoring programs to be implemented to meet the requirements of section 4.11 of ~~these regulations~~ this rule;

3.10.1.e. The proposed closure plan and final use as specified in section 6.1 of ~~these regulations~~ this rule;

3.10.1.f. The proposed method of demonstrating financial responsibility for closure, post-closure ~~and long term~~ care and corrective action requirements including preliminary itemized cost estimates for land acquisition, facility preparation, construction of each major phase, daily operation, closure, post-closure ~~and long term~~ care and corrective action. An estimated cost per ton for disposal must also be included;

3.10.1.g. Proposed design for access roads;

3.10.1.h. Proposed design for drainage and sediment control; and

3.10.1.i. Proposed revegetation plan including seed mixture, seed bed preparation, fertilizers, mulching, and maintenance schedule.

3.10.2. Preliminary Engineering Plans. The preliminary engineering design must be presented on twenty-four inch by thirty-six inch (24" x 36") plan sheets (unless an alternative size is approved by the ~~chief~~ director in writing) as follows:

3.10.2.a. Proposed access, lateral extent of filling, phases of facility development, sub-base and base grades, slopes and the leachate collection system. The existing conditions map ~~shall~~ must be used as a base map for this plan sheet;

3.10.2.b. A plan sheet showing present topography, proposed base and sub-base grades, final grades, and liner and final cover system configuration displayed on all geologic cross-sections intersecting the landfill;

3.10.2.c. A monitoring plan sheet showing the proposed groundwater, leachate, surface water, gas, air unsaturated zone, and any other monitoring programs;

3.10.2.d. A drainage plan sheet showing:

3.10.2.d.A. The directional flow of water on and away from the land to be affected;

3.10.2.d.B. The location of all erosion and sedimentation control structures;

3.10.2.d.C. The component drainage area together with a table showing total acreage and disturbed acreage within each component; and

3.10.2.d.D. A sediment structure table showing type of sediment control structure, total contributing drainage area (acres), disturbed acreage controlled by total disturbance in the drainage area (acres), and storage

capacity (acre-feet);

3.10.2.e. A detailed plan sheet showing proposed closure sequence and final grades;

3.10.2.f. A plan sheet showing the details of proposed design features for the major engineering structures at the facility; and

3.10.2.g. A plan sheet for any blasting that must be conducted at the facility. All blasting operations must comply with the following:

3.10.2.g.A. The blasting must be done during clear weather and during times when there is minimal traffic;

3.10.2.g.B. The blasting contractor must follow current blasting laws, regulations, rules of the state, federal, and local authorities and all appropriate regulatory agencies must be notified.

3.10.2.g.C. Adjacent residents and property owners and the proper local authorities must be properly informed about and notified of the upcoming blast operations;

3.10.2.g.D. The blasting contractor must initiate or employ a smooth blasting technique by using explosives with low charge concentration. Drilling patterns must be closely spaced with an appropriate blast hole diameter in a square or staggered drilling pattern. Blast hole design must depend on current field conditions;

3.10.2.g.E. To reduce ground vibration and excessive air blast, the contractor must employ a proper delay timing; use appropriate decking of charges and explosive powder factors applicable to the rock types being blasted;

3.10.2.g.F. The contractor must not blast below maximum approved elevations. The under-drilled few feet of the blast holes must not be loaded with explosives; and

3.10.2.g.G. Blasting must not be conducted on Sunday.

3.10.3. Sequencing of Solid Waste Disposal.

3.10.3.a. Solid Waste Placement Schedule.

The sequence of solid waste disposal ~~shall~~ must be specified in a schedule of solid waste placement which ~~shall~~ must be approved by the ~~chief~~ director. The solid waste placement schedule ~~shall~~ must correspond to a horizontal control grid system, with grid elements having maximum dimensions of two hundred (200) feet square. The horizontal control grid system ~~shall~~ must be referenced to a permanent physical marker or object on the site, with vertical control referenced to an elevation established for the marker. The solid waste placement schedule ~~shall~~ must specify the order in which grid elements (maximum two hundred (200) square feet in size) will be used for solid waste disposal for each lift of every solid waste fill area.

3.10.3.b. Solid Waste Disposal Coordination.

The schedule of solid waste placement ~~shall~~ must be coordinated with the construction of on-site access roads, surface water drainage systems, leachate collection systems and other facility construction in solid waste fill areas.

3.11. Landfill Liners.

3.11.1. Performance Standards.

The application ~~shall~~ must contain plans, drawings, ~~and~~ cross-sections, and specifications for a liner system to demonstrate compliance with performance standards and other requirements of this rule, including, but not limited to section 4.5.4 of this rule, and including the following:

3.11.1.a. The design of the liner system;

3.11.1.b. The thickness and characteristics of the subbase;

3.11.1.c. The thickness and characteristics of the leachate detection zone;

3.11.1.d. The design for the leachate monitoring system in the leachate detection zone;

3.11.1.e. The nature and thickness of the liner material;

3.11.1.f. The thickness and characteristics of the leachate collection zone;

3.11.1.g. The design for the leachate collection system in the collection zone;

3.11.1.h. The thickness and characteristics of the protective cover; and

3.11.1.i. A plan for installing the liner system.

3.11.2. Q.A./Q.C. Plan.

The application ~~shall~~ must include a quality assurance and quality control (Q.A./Q.C.) plan for the construction and installation of the liner system. At a minimum, the Q.A./Q.C. plan ~~shall~~ must include:

3.11.2.a. A description of the testing procedures and construction methods proposed to be implemented during construction of the liner system;

3.11.2.b. A description of the manner in which the protective cover and liner system will be maintained and protected in unfilled portions of the disposal area prior to and during placement of the initial lift of solid waste; and

3.11.2.c. A description of the manner in which the protective cover

and liner system will be protected from weather prior to and during placement of the initial lift of solid waste.

3.11.3. Leachate Considerations.

The application ~~shall~~ must demonstrate that leachate will not adversely affect the physical or chemical characteristics of the proposed liner system, or inhibit the liner's ability to restrict the flow of solid waste, solid waste constituents or leachate, based on the most recent edition of EPA Method 9090, Compatibility Test for Wastes and Membrane Liners, or other documented data.

3.12. Identification and Characterization of Potential Borrow Sources for Landfills.

3.12.1. General.

The application ~~shall~~ must contain a description of each proposed borrow source for liner and capping purposes including the volume of acceptable material, total acreage, ownership, location, present land use, transportation routes and any access restrictions, travel distance from the proposed waste disposal facility, surface water drainage patterns, and significant hydrologic features such as surface waters, springs, drainage divides, and natural wetlands.

3.12.2. Field and Laboratory Investigations.

At a minimum, preliminary field and laboratory investigations to define the physical characteristics of the proposed borrow material must include the information specified in section 3.8.2 of ~~these regulations~~ this rule unless an alternative geotechnical investigation program is approved by the ~~chief~~ director in writing. Applicants may submit an alternative program in cases where previous information exists regarding the proposed source.

3.12.3. Data Presentation.

The following information must be submitted ~~with~~ as part of the application:

3.12.3.a. The calculated volume of acceptable material based on the information obtained from the test pits or borings;

3.12.3.b. Property boundaries and test pit/boring locations shown on a map based upon a USGS topographic map, or other equivalent map, with a scale of one inch equal to five hundred feet (1 inch = 500 feet). The mapped area must extend a minimum of five hundred (500) feet beyond the proposed borrow source;

3.12.3.c. An isopach map showing the thickness of acceptable material;

3.12.3.d. A description of the methods to be used for separating the acceptable materials from any unacceptable materials;

3.12.3.e. A proposal for maintaining drainage, sedimentation control, and proper abandonment of the property, including the introduction

and maintenance of vegetation which conforms to the minimum requirements of section 4.5.6 of this rule; and

3.12.3.f. All data obtained from the testing program.

Note: It may be necessary to obtain federal, state, or local permits prior to excavating materials from a borrow source near or within surface waters or natural wetlands. It is the responsibility of the applicant or property owner to obtain any such permits.

3.13. Bonding and Financial Assurance for Solid Waste Facilities.

The mechanisms used to demonstrate financial assurance under this section must ensure that the funds necessary to meet the costs of closure, post-closure care, and corrective action for known releases will be available whenever they are needed, and include the requirements of sections 3.13.14, 3.13.15 and 3.13.16 of this rule, and

3.13.1. Requirements for Commercial Solid Waste Facilities.

Note: Non-commercial solid waste facilities are exempt from the requirements of section 3.13 of this rule.

3.13.1.a. The ~~chief~~ director will not approve a new, reissued, renewed, or modified permit for a commercial solid waste facility unless the applicant first submits to the director a bond or other form of financial assurance, as applicable, in accordance with ~~these regulations~~ this rule and the bond or other form of financial assurance is approved by the director.

3.13.1.b. The bond or financial assurance must be submitted after the application is approved but before the permit, modification, transfer, assignment, or other permitting function is approved or issued. No permit will be issued until the bond or financial assurance is approved by the director and is in full force and effect.

3.13.1.c. A person who holds a valid ~~Department~~ division permit to conduct a commercial solid waste activity but wishes to modify, transfer, assign, or perform any other permitting function must comply with section 3.13.1.b of this rule, on the effective date of ~~these regulations~~ this section must file a bond or other type of financial assurance with the director prior to receiving the approval of the director for the permit, modification or other permitting function as required under ~~these regulations~~ this rule.

3.13.1.d. Applicability.

The requirements of this section apply to permittees of all SWLFs, except as provided in section 3.13.1. The requirements of this section are effective on the date specified in 40 CFR Part 258 Section 70(b), as amended. If a state or federal government entity should become a permittee in the State of West Virginia, they will be exempt from the requirements of this section, since their debts and liabilities are the debts and liabilities of the state or the United States.

3.13.2. General Bonding and Financial Assurance Requirements.

3.13.2.a. All forms of financial assurance and bonds must be submitted under the requirements of ~~these regulations~~ this rule on a form prepared and furnished by the director, must be made payable to the State of West Virginia, and must provide for continuous liability from the initiation of operations at the facility for the full term of the permit and for ~~up to ten (10)~~ at least thirty (30) years after final closure of the permit site. Any further time period required ~~by the permittee~~ to achieve compliance with the requirements ~~in~~ of the closure plan of the permit or other requirements of the division ~~shall~~ must be considered an additional liability period.

3.13.2.a.A. The use of any of the mechanisms listed in section 3.13 of this rule, must ensure the satisfaction of the following criteria:

3.13.2.a.A.(a) That the amount of funds assured is sufficient to cover the costs of closure, post-closure care, and corrective action for known releases when needed;

3.13.2.a.A.(b) That funds will be available in a timely fashion when needed;

3.13.2.a.A.(c) The financial assurance mechanism(s) must in full force and effect be by the effective date of these requirements or prior to the initial receipt of solid waste, whichever is later, in the case of closure and post-closure care, and no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of section 4.11.7 of this rule, until the permittee is released from the financial assurance requirements under sections 3.13.13, 3.13.14, and 3.13.15 of this rule.

3.13.2.a.A.(d) The financial assurance mechanisms must be legally valid, binding, and enforceable under state and federal law.

3.13.2.b. If a permit applicant elects to offer a certificate or securities as a form of financial assurance or bond, then the cash deposit or market value of such securities or certificates must be equal to or greater than the sum of the bond.

3.13.2.c. All forms of financial assurance or bonds ~~shall~~ must be conditioned on compliance with the Solid Waste Management Act, ~~the regulations~~ any rules promulgated thereunder, orders issued by the ~~chief or~~ the director, and the terms and conditions of the permit.

3.13.2.d. All forms of financial assurance or bonds will be reviewed for legality and form in accordance with established ~~Department~~ division procedures.

3.13.2.e. All forms of financial assurance, or bonds will be placed with the state treasurer to be held in the name of the state in trust for the purpose for which the deposit is made when the permit is issued.

3.13.2.f. With the director's permission, the permittee may remove the deposit if it is first replaced with an equivalent or greater deposit.

3.13.2.g. If for any reason a permittee fails to maintain proper financial assurance or bonding, the director ~~shall~~ will issue a cease and desist order and revoke the permit and the permittee ~~shall~~ becomes fully liable for the amount of the bond.

3.13.2.h. The penal sum of any financial assurance must be in an amount at least equal to the sum of the current closure, post-closure care and/or corrective action cost estimate, as applicable.

3.13.3. ~~Form of Bond or~~ Other Allowable Mechanisms of Financial Assurance or Bonding.

3.13.3.a. The director will accept the following types of financial assurance or bonding:

3.13.3.a.A. A surety bond;

3.13.3.a.B. A collateral bond (including cash and securities);

3.13.3.a.B.(a) Cash deposits;

3.13.3.a.B.(b) Collateral securities;

3.13.3.a.B.(c) Certificates, including;

3.13.3.a.B.(c)(A) Bonds of the United States or its possessions;

3.13.3.a.B.(c)(B) Bonds of the Federal Land Bank;

3.13.3.a.B.(c)(C) Bonds of the Homeowners Loan Corporation;

3.13.3.a.B.(c)(D) Full Faith and General Obligation bonds of the State of West Virginia or other states and of any West Virginia county, district, or municipality, or of other states;

3.13.3.a.C. Escrow Account. An escrow account;

3.13.3.a.D. Collateral bonds; including;

3.13.3.a.D.(a) Letters of credit;

3.13.3.a.D.(b) Certificates of deposit; and

3.13.3.a.D.(c) Negotiable bonds

3.13.3.a.E. Performance bonding fund participation (as established by the director); ~~and~~

3.13.3.a.F. ~~A combination of these methods~~ Trust Fund.

3.13.3.a.G. State-Approved Mechanism (Reserved)

3.13.3.a.H. State Assumption of Responsibility (Reserved).

3.13.3.a.J. Use of Multiple Financial Mechanisms.

~~3.13.3.b. If collateral bonding is selected by the permittee only the following forms of collateral bonding will be allowed.~~

~~3.13.3.b.A. Cash deposit;~~

~~3.13.3.b.B. Collateral securities; and~~

~~3.13.3.b.C. Certificates:~~

~~3.13.3.b.C.(A) Bonds of the United States or its possessions;~~

~~3.13.3.b.C.(b) Bonds of the Federal Land Bank;~~

~~3.13.3.b.C.(c) Bonds of the Homeowners Loan Corporation;~~

~~3.13.3.b.C.(d) Full Faith and General Obligation bonds of the State of West Virginia or other states and of any West Virginia county, district, or municipality, or of other states; and~~

~~3.13.3.b.C.(e) Certificates of deposit in a bank in this State in favor of the Department.~~

3.13.4. Special Terms and Conditions for Surety Bonds Guaranteeing Payment or Performance.

A permittee may demonstrate financial assurance for closure, post-closure care, or corrective action by obtaining a payment or performance surety bond which conforms to the requirements of this section.

3.13.4.a. The director will not accept the bond of a surety company that has failed, or unduly delayed, as determined by the director, in making payment on a forfeited surety bond.

3.13.4.a.A. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

3.13.4.b. The director will accept only the bond of a surety authorized to do business in this state when the surety bond is signed by an appropriate official of the surety as determined by the director. If the principal place of business of the surety is outside of this state, the surety bond must also be signed by an authorized resident agent of the surety.

3.13.4.c. The bond must provide that full payment will be made under the bond within thirty (30) days of receipt of the ~~Department's~~ division's declaration of forfeiture by the surety.

3.13.4.d. The director will not accept surety bonds from a surety company when the total bond liability to the ~~Department on~~ division for bonds filed by the permittee, the principal and related parties exceed the surety company's single risk limit.

3.13.4.d.A. Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the permittee and to the director 120 days in advance of cancellation.

3.13.4.d.A.(a) If the surety cancels the bond, the permittee must obtain alternative financial assurance as specified in this section.

3.13.4.d.A.(b) The permittee may cancel the bond only if alternative financial assurance is substituted as specified in this section or if the permittee is no longer required to demonstrate financial responsibility in accordance with sections 3.13.14.b, 3.13.15.b, or 3.13.16.b of this rule.

3.13.4.e. The bond ~~shall~~ must provide that the surety and the principal are jointly and severally liable for payment of the bond amount.

3.13.4.f. Surety Bond Forfeiture.

3.13.4.f.A. The director will provide in the bond that the amount must be confessed to judgment and execution upon forfeiture.

3.13.4.f.B. Any surety bond obtained by the permittee must state that the surety will become liable on the bond obligation should the permittee fail to perform as guaranteed by the bond.

3.13.4.g. The ~~Department~~ division will retain, during the term of the bond, and upon forfeiture of the bond, a property interest in the surety's guarantee of payment under the bond which may not be affected by the bankruptcy, insolvency, or other financial incapacity of the permittee or principal on the bond.

3.13.4.h. The bond ~~shall~~ must provide that the surety will give written notice to the principal and the ~~Department~~ division within ten (10) days of a notice received or an action filed by or with a regulatory agency having jurisdiction over the surety alleging one of the following:

3.13.4.h.A. The insolvency or bankruptcy of the surety.

3.13.4.h.B. Violations of regulatory requirements applicable to the surety, when as a result of the violations, suspension or revocation of the surety's license to do business in this state or another state is under consideration by the regulatory agency.

3.13.4.i. Surety Bonds for Corrective Action, Closure and Post-Closure Care.

3.13.4.i.A. A permittee may demonstrate financial assurance for corrective action, closure and post-closure care by obtaining a performance bond which conforms to the requirements of this section.

3.13.4.i.B. A bond for corrective action must be effective before the initial receipt of waste, or before the effective date of this rule, whichever is later.

3.13.4.i.C. A bond for closure or post-closure care, must be

effective no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of section 4.11.7.

3.13.4.j. Standby Trust Fund.

3.13.4.j.A. As provided in part 3.13.4.j. of this rule, the permittee must establish a standby trust fund.

3.13.4.j.B. The standby trust fund must meet the requirements of section 3.13 of this rule, except the requirements for initial payment and subsequent annual payments specified in section 3.13.11.a of this rule.

3.13.4.k.B. Payments made under the terms of the bond will be deposited by the surety directly into the standby trust fund.

3.13.4.k.C. Payments from the trust fund must be approved by the trustee.

3.13.5. General Terms and Conditions for Collateral Bonds.

3.13.5.a. The applicant may submit a collateral bond in one or more of the following forms:

3.13.5.a.A. Cash Deposits.

3.13.5.a.B. Certified checks, cashier's checks, or treasurer's checks which are issued, drawn on or certified by a bank or banking institution authorized to do business in this state.

3.13.5.a.C. Automatically renewable and assignable certificates of deposit from banks or banking institutions authorized to do business in this state.

3.13.5.a.D. Automatically renewable, irrevocable standby letters of credit from banks or banking institutions authorized to do business in this state.

3.13.5.a.E. Negotiable bonds of the United States Government; the Federal Land Bank; the Homeowners Loan Corporation; and Full Faith and General Obligation bonds of the State of West Virginia or other states, and of any West Virginia county, district, ~~or~~ municipality, or of other states.

3.13.5.b. The market value of the collateral deposited must be at least equal to or greater than the sum of the required bond amount.

3.13.5.c. The director will place collateral submitted under ~~these regulations~~ this rule with the state treasurer, who is responsible for its custody and safe keeping until released or collected and deposited in an appropriate fund designated by the director.

3.13.5.d. Collateral must be in the name of the permittee, and pledged and assigned to the state free and clear of claims or rights. The pledge or assignment ~~shall~~ must vest in the state a property interest in the collateral which ~~shall~~ must remain until released under the terms of ~~these~~

~~regulations~~ this rule, and may not be affected by the bankruptcy, insolvency, or other financial incapacity of the permittee.

3.13.5.e. The state will ensure that its ownership rights to collateral deposited are established to make the collateral readily available to the state upon forfeiture. The director may require proof of ownership, and other means such as secondary agreements, as he or she deems necessary to meet the requirements of ~~these regulations~~ this rule. If the director determines that collateral deposited does not meet the requirements of ~~these regulations~~ this rule, he or she may take action under the law to protect the state's interest in the collateral.

3.13.6. Collateral Bonds; Escrow.

3.13.6.a. The director may authorize the permittee to establish an escrow account deposited in one or more federally-insured accounts payable on demand only to the director, or directly deposited with the director.

3.13.6.b. Escrow funds deposited in federally-insured accounts ~~shall~~ must not exceed the maximum insured amount under applicable federal insurance programs such as the Federal Deposit Insurance Corporation (F.D.I.C.) or the Federal Savings and Loan Insurance Corporation (F.S.L.I.C.).

3.13.6.c. Interest paid on an escrow account ~~shall~~ must be retained in the escrow account and applied to the bond value of the escrow account unless the director has approved that the interest be paid to the permittee. In order to qualify for interest payment, the permittee ~~shall~~ must request such action in writing during the permit application process.

3.13.7. Collateral Bonds; Letters of Credit.

A permittee may satisfy the requirements of this section by obtaining an irrevocable standby letter of credit which conforms to the requirements of this section.

3.13.7.a. Bank letters of credit submitted as collateral for collateral bonds are subject to the following conditions:

3.13.7.a.A. The letter of credit must be a standby or guarantee letter of credit issued by a federally-insured or equivalently protected bank or banking institution authorized to do business in this State. The letter of credit may not be issued without a credit analysis substantially equivalent to a credit analysis applicable to a potential borrower in an ordinary loan situation. A letter of credit so issued must be supported by ~~the customer's~~ an applicant's unqualified obligation to reimburse the issuer for monies paid under the letter of credit.

3.13.7.a.B. The letter of credit must be irrevocable, and must be so designated. The letter of credit must be issued for a period of at least one year in an amount at least equal to the current cost estimate for closure, post-closure care or corrective action, whichever is applicable, except as provided in section 3.13.11.a of this rule.

3.13.7.a.B.(a) The letter of credit must provide that the

expiration date will be automatically extended for a period of at least one year unless the issuing institution has canceled the letter of credit by sending notice of cancellation by certified mail to the permittee and to the director 90 days in advance of cancellation.

3.13.7.a.B.(b) If the letter of credit is canceled by the issuing institution, the permittee must obtain alternative financial assurance or bonding.

3.13.7.a.B.(c) The permittee may cancel the letter of credit only if alternative financial assurance or bonding is substituted as specified in this section or if the permittee is released from the requirements of this section in accordance with sections 3.13.14.b, 3.13.15.b, or 3.13.16.b of this rule.

3.13.7.a.B.(d) A letter from the permittee referring to the letter of credit by number, issuing institution, and date, and providing the following information: name, and address of the facility, and the amount of funds assured, must be included with the letter of credit in the operating record.

3.13.7.a.C. The director may not accept letters of credit issued for ~~a customer~~ an applicant when the amounts of the letter of credit, aggregated with other loans and credits extended to the ~~customer~~ applicant, exceeds the issuer's legal lending limit for that ~~customer~~ applicant as defined in the United States Banking Code (12 U.S.C. §§21-220).

3.13.7.a.D. Letters of credit must name the West Virginia ~~Department of Natural Resources~~ Division of Environmental Protection as beneficiary and ~~shall~~ must be payable to the division ~~Department~~ upon demand, in part or in full, upon presentation of the division's ~~Department's~~ drafts, at sight. The ~~Department's~~ division's right to draw upon the letter of credit does not require documentary or other proof by the division ~~Department~~ that the ~~customer~~ applicant has violated the conditions of the bond, the permit, or another requirement.

3.13.7.a.E. The director will not accept letters of credit from a bank which has failed or delayed in making payment on a letter of credit previously submitted as collateral to the division ~~Department~~.

3.13.7.b. The director will not accept letters of credit from a bank for any person, for all permits held by that person, in excess of three (3) times the company's maximum single obligation as provided by state law.

3.13.7.c. The director will provide in the indemnity agreement that the amount ~~shall~~ will be confessed to judgement upon forfeiture.

3.13.7.d. The letter of credit must provide that:

3.13.7.d.A. The bank will give prompt notice to the permittee and the director of any notice received or action filed alleging the insolvency or bankruptcy of the bank, or alleging any violations of regulatory requirements which could result in suspension or revocation of the bank's charter or license to do business.

3.13.7.d.B. In the event the bank becomes unable to fulfill its obligations under the letter of credit for any reason, notice ~~shall~~ must be given immediately to the permittee and the director.

3.13.7.d.C. Upon the incapacity of a bank by reason of bankruptcy, insolvency, ~~or~~ suspension or revocation of its charter or license, the permittee must be deemed to be without bond coverage. The director ~~shall~~ must issue an order against any operator who is without bond coverage. The notice will specify the period within which bond coverage must be replaced. If the permittee cannot replace the bond within the specified period of time, then the director ~~shall~~ must immediately revoke the permit. The permittee ~~shall~~ will be fully liable for the amount of the bond coverage.

3.13.7.d.D. The estimated bond value of all collateral posted as bond assurance will be subject to a margin bond value to market value ratio as determined by the director. This margin will reflect legal and liquidation fees, as well as value depreciation, marketability and fluctuations which might affect the net cash available to the director in performing closure or other remedial measures. The bond value of collateral may be evaluated at any time, but must be evaluated as part of permit renewal. In no case may the bond value exceed the market value.

3.13.7.e. The issuing bank must waive the rights of setoff or liens which it has or might have against the letter of credit.

3.13.7.f. If the director collects an amount under the letter of credit due to failure of the permittee to replace the letter of credit after demand by the director, the ~~Department~~ division will hold the proceeds as cash collateral.

3.13.7.g. After the letter of credit is approved by the director, the permittee must retain a copy of the letter of credit in the facility operating record.

3.13.7.h. The letter of credit must be effective before the initial receipt of waste or before the effective data of this section, whichever is later, in the case of closure and post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of section 4.11.7 of this rule.

3.13.7.i. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency.

3.13.8. Collateral Bonds; Certificates of Deposit.

3.13.8.a. Certificates of deposit submitted as collateral for collateral bonds are subject to the following conditions:

3.13.8.a.A. The certificates of deposit must be made payable to the ~~permittee~~ division or the permittee and the division and ~~shall~~ must be assigned to the ~~Department~~ division by the permittee, in writing, as required by the director and on forms provided by the director. The assignment must be recorded upon the books of the bank issuing the certificate.

3.13.8.a.B. The certificate of deposit must be issued by a federally-insured or equivalently protected bank or banking institution which is authorized to do business in this state.

3.13.8.a.C. The director will not accept certificates of deposit from a bank or banking institution when the accumulated total of certificates of deposit issued by the bank or banking institution for the operator is in excess of one hundred thousand dollars ($100,000), or the maximum insurable amount as determined by the F.D.I.C. or the F.S.L.I.C., if the banking institution is insured by the F.D.I.C. or F.S.L.I.C. If it is insured by an equivalent method administered by the state, similar limits apply.

3.13.8.a.D. The certificate of deposit must state that the bank issuing it waives the rights or setoff or liens which it has or might have against the certificate.

3.13.8.a.E. The certificate of deposit must be automatically renewable and fully assignable to the state. Certificates of deposit must state on the face that they are automatically renewable.

3.13.8.a.F. The permittee must submit certificates of deposit in amounts which will allow the ~~Department~~ division to liquidate the certificates prior to maturity, upon forfeiture, for the full amount of the bond determined in accordance with and required by ~~these regulations~~ this rule, without penalty to the ~~Department~~ division.

3.13.8.a.G. The director will not accept certificates of deposit from banks which have failed or unduly delayed in making payment on certificates of deposit which have previously been submitted as collateral to the ~~Department~~ division.

3.13.8.a.H. The permittee is not entitled to interest accruing after forfeiture is declared by the ~~Department~~ division, unless and until the forfeiture declaration is ruled invalid by a court having jurisdiction over the ~~Department~~ division, and the ruling is final.

3.13.9. Collateral Bonds; Negotiable Bonds.

3.13.9.a. Negotiable bonds submitted and pledged as collateral for collateral bonds are subject to the following conditions:

3.13.9.a.A. The director may determine the current market value of governmental securities for the purpose of establishing the value of the securities for bond deposit.

3.13.9.a.B. The current market value ~~shall~~ must be at least equal to the amount of the required bond.

3.13.9.a.C. The ~~Department~~ division may periodically revalue the securities and may require additional amounts if the current market value is insufficient to satisfy the bond amount requirements for the facility.

3.13.9.a.D. The permittee may request and receive the interest accruing on governmental securities with the ~~Department~~ division as the same

becomes due and payable. No interest will be paid for post-forfeiture interest accruing during appeals and after resolution of the appeals, when the forfeiture is adjudicated, decided, or settled in favor of the state.

3.13.10. Use of Multiple Mechanisms ~~Surety/Collateral Combination Bonds.~~

3.13.10.a. The director may accept ~~a~~ financial assurance or bond which is comprised of more than one financial mechanism per facility, as listed in ~~surety and collateral bond instruments otherwise allowed by these regulations~~ this rule, except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the current cost estimate for closure, post-closure care or corrective action, whichever is applicable.

3.13.10.a.A. The instruments chosen must be construed as part of the entire bond for the facility.

3.13.10.a.B. The director may refuse to accept the bond if he or she determines that the financial guarantee of the bond is unacceptable, or for another reason does not meet the purposes of the Act, ~~these regulations~~ this rule, or orders of the ~~chief or the~~ director.

3.13.10.a.C. The financial test and a guarantee provided by a corporate parent, sibling, or grandparent may not be combined if the financial statements of the two firms are consolidated.

3.13.11. Other Forms of Bonding ~~(reserved)~~, Other forms of bonding including, but not limited to:

3.13.11.a. Trust Fund.

3.13.11.a.A. A permittee may satisfy the requirements of this section by establishing a trust fund which conforms to the requirements of this section.

3.13.11.a.A.(a) The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency.

3.13.11.a.A.(b) A copy of the trust agreement must be placed in the facility's operating record.

3.13.11.a.B. Payment into the trust fund must be made annually by the permittee over the term of the initial permit or over the remaining life of the SWLF, whichever is shorter, in the case of a trust fund for closure or post-closure care, or over one-half of the estimated length of the corrective action program in the case of corrective action for known releases. This period is referred to as the pay-in period.

3.13.11.a.C. For a trust fund used to demonstrate financial assurance for closure and post-closure care, the first payment into the trust fund must be at least equal to the current cost estimate for closure and post-closure care, except as provided in section 3.13.11.c of this rule, divided by

the number of years in the corrective action pay-in period as defined in section 3.13.11.a.B of this section.

3.13.11.a.D. The amount of subsequent payments must be determined by the following formula:

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

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

3.13.11.a.E. For a trust fund used to demonstrate financial assurance for corrective action, the first payment into the trust fund must be at least equal to one-half of the current cost estimate for corrective action, except as provided in section 3.13.11.c of this rule, divided by the number of years in the corrective action pay-in period as defined in section 3.13.11.a.B of this rule.

3.13.11.a.E.(a) The amount of subsequent payments must be determined by the following formula:

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

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

3.13.11.a.F. The initial payment into the trust fund must be made before the initial receipt of waste or before the effective data of section 40 CFR Part 258.70(b), whichever is later, in the case of closure and post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of section 4.11.7 of this rule.

3.13.11.a.G. If the permittee establishes a trust fund after having used one or more alternative mechanisms specified in this section, the initial payment into the trust fund must be at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to the specifications of section 3.13.11 of this rule.

3.13.11.a.H. The permittee, or other person authorized to conduct closure, post-closure care, or corrective action activities may request reimbursement from the trustee for these expenditures.

3.13.11.a.H.(a) Requests for reimbursement will be granted by the trustee only if sufficient funds are remaining in the trust fund to cover the remaining costs of closure, post-closure care, or corrective action, and if justification and documentation of the cost is placed in the operating

record.

3.13.11.a.H.(b) The permittee must notify the director that the documentation of the justification for reimbursement has been placed in the operating record and that reimbursement has been received.

3.13.11.a.I. The trust fund may be terminated by the permittee only if the permittee substitutes alternative financial assurance as specified in this section or if he or she is no longer required to demonstrate financial responsibility in accordance with the requirements of sections 3.13.14.b, 3.13.15.b, or 3.13.16.b of this rule.

3.13.11.b. State-Approved Mechanism. (Reserved)

3.13.11.c. State Assumption of Responsibility. (Reserved)

3.13.12. Replacement of Existing Bond.

3.13.12.a. The director may allow a permittee to replace an existing surety or collateral bond with another surety or collateral bond, if the liability which has accrued against the bond, the permittee and the facility is transferred to the replacement bond. The replacement bond must include an endorsement by the permittee acknowledging the retroactivity of the liability to the date of issue of the original solid waste permit or a prior date determined by the director. The bond amount for this replacement bond will be determined under ~~these regulations~~ this rule, but may not be less than the amount on deposit with the ~~Department~~ division.

3.13.12.b. The ~~Department~~ division will not release existing bonds until the permittee has submitted and the director has approved acceptable replacement bonds that are in full force and effect. A replacement of bonds under section 3.13.12 of ~~these regulations~~ this rule does not constitute a release of bond under ~~these regulations~~ this rule.

3.13.13. Bond Amounts.

3.13.13.a. In accordance with the provisions of W. Va. Code ~~§20-5F-5b~~ 22-15-12, all permits ~~shall~~ must be bonded for at least ten thousand dollars ($10,000), or a sufficient amount to satisfy all of the requirements of this rule, whichever is the higher amount.

~~**3.13.13.b.** Bond amounts for landfills which meet or exceed the liner requirements of these regulations shall be set at one thousand to four thousand dollars ($1,000 to $4,000) per acre at the discretion of the director.~~

~~**3.13.13.c.** Bond amounts for single liner landfills currently approved by the director shall be six thousand dollars ($6,000) per acre.~~

~~**3.13.13.d.** Bond amounts for landfills that do not have liners shall be eight thousand dollars ($8,000) per acre.~~

~~**3.13.13.e.** Bond amounts for solid waste facilities other than landfills that exceed the requirements of these regulations shall be set at~~

~~one thousand to four thousand dollars ($1,000 to $4,000) per acre at the discretion of the director.~~

~~3.13.13.f. Bond amounts for solid waste facilities other than landfills that meet the requirements of these regulations shall be set at four thousand to eight thousand dollars ($4,000 to $8,000) per acre at the discretion of the director.~~

3.13.14. Financial Assurance for Closure.

3.13.14.a. The permittee must have a detailed written estimate, in current dollars, of the cost of hiring a third party to close the largest area of all SWLFs ever requiring a final cover as required under section 6 of this rule at any time during the active life in accordance with the closure plan.

3.13.14.a.A. The permittee must notify the director in writing of that ~~the~~ estimate and maintain a copy in the operating record.

3.13.14.a.A.(a) The cost estimate must equal the cost of closing the largest area of all SWLFs ever requiring a final cover at any time during the active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan (see section 6.1.5.c.A.(B) of this rule).

3.13.14.a.A.(b) During the active life of the SWLF, the permittee must annually adjust the closure cost estimate for inflation.

3.13.14.a.A.(c) The permittee must increase the closure cost estimate and the amount of financial assurance provided under sections 3.13.14.b and 3.13.14.b.A of this rule, if changes to the closure plan or SWLF conditions increase the maximum cost of closure at any time during the remaining active life.

3.13.14.a.A.(d) The permittee may reduce the closure cost estimate and the amount of financial assurance provided under sections 3.13.14.b and 3.13.14.b.A of this rule, if the cost estimate exceeds the maximum cost of closure at any time during the remaining life of the SWLF.

3.13.14.a.A.(d)(A) The permittee must notify the director that the justification for the reduction of the closure cost estimate and the amount of financial assurance has been placed in the operating record.

3.13.14.b. The permittee of each SWLF's operating record must establish financial assurance for closure of the SWLF in compliance with section 3.13 of this rule.

3.13.14.b.A. The permittee must provide continuous coverage for closure until released from financial assurance requirements by demonstrating compliance with section 6 of this rule.

3.13.15. Financial Assurance for Post-Closure Care.

3.13.15.a. The permittee must have, at all times, a detailed written estimate, in current dollars, of the cost of hiring a third party to conduct

post-closure care for the SWLF in compliance with the post-closure plan developed under section 6.3 of this rule.

3.13.15.a.A The post-closure cost estimate used to demonstrate financial assurance in sections 3.13.15.b and 3.13.15.b.A of this section must account for the total costs of conducting post-closure care, including annual and periodic costs as described in the post-closure plan over the entire post-closure care period. The permittee must notify the director that a copy of the estimate has been placed in the operating record.

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

3.13.15.a.A.(b) During the active life of the SWLF and during the post-closure care period, the permittee must annually adjust the post-closure cost estimate for inflation.

3.13.15.a.A.(c) The permittee must increase the post-closure care cost estimate and the amount of financial assurance provided under sections 3.13.15.b and 3.13.15.b.A of this rule, if changes in the post-closure plan or SWLF conditions increase the maximum costs of post-closure care.

3.13.15.a.A.(d) The permittee may reduce the post-closure cost estimate and the amount of financial assurance provided under section 3.13.15.b of this rule, if the cost estimate exceeds the maximum costs of post-closure care remaining over the post-closure care period.

3.13.15.a.A.(d)(A) The permittee must notify the director and receive written approval of the director of the justification for the reduction of the post-closure cost estimate and the amount of financial assurance prior to placing these documents in the operating record.

3.13.15.b. The permittee of each SWLF must establish, in a manner in accordance with section 3.13.15 of this rule, financial assurance for the costs of post-closure care as required under section 6.3 of this rule.

3.13.15.b.A. The permittee must provide continuous coverage for post-closure care until released from financial assurance requirements for post-closure care by demonstrating compliance with section 6.3.7.a of this rule.

3.13.16. Financial Assurance for Corrective Action.

3.13.16.a. A permittee of a SWLF required to undertake a corrective action program under section 4.11.7 of this rule must have a detailed written estimate, in current dollars, of the cost of hiring a third party to perform the corrective action in accordance with the program required under section 4.11.7 of this rule.

3.13.16.a.A. The corrective action cost estimate must account for the total costs of corrective action activities as described in the corrective action plan for the entire corrective action period.

3.13.16.a.A.(a) The permittee must notify the director that the estimate has been placed in the operating record.

3.13.16.a.B. The permittee must annually adjust the estimate for inflation until the corrective action program is completed in accordance with section 4.11.7.f of this rule.

3.13.16.a.C. The permittee must increase the corrective action cost estimate and the amount of financial assurance provided under section 3.13.16.b of this rule, if changes in the corrective action program or SWLF conditions increase the maximum costs of corrective action.

3.13.16.a.D. The permittee may reduce the amount of the corrective action cost estimate and the amount of financial assurance provided under section 3.13.16.b of this rule, if the cost estimate exceeds the maximum remaining costs of corrective action.

3.13.16.a.D.(a) The permittee must notify the director that the justification for the reduction of the corrective action cost estimate and the amount of financial assurance has been placed in the operating record.

3.13.16.b. The permittee of each SWLF required to undertake a corrective action program under section 4.11.7 of this rule must establish, in a manner in accordance with section 3.13 of this rule, financial assurance for the most recent corrective action program.

3.13.16.b.A. The permittee must provide continuous coverage for corrective action until released from financial assurance requirements for corrective action by demonstrating compliance with sections 4.11.7.f and 4.11.7.g of this rule.

3.14. Background Investigation Disclosure Statement.

3.14.1. **Applicability.**

Every applicant for a solid waste facility permit ~~shall~~ must file a background investigation disclosure statement with the director at the time the initial application is filed, unless exempt from such disclosure under the provisions of section 3.14.4 of ~~these regulations~~ this rule.

3.14.2. **Copies and Fees.**

Background investigation disclosure statements ~~shall~~ must be filed by submitting a notarized original and one (1) certified copy of all papers and other applicable documents, ~~including Personal History Disclosure Forms,~~ to the director accompanied by a nonrefundable investigation fee in accordance with the schedule of fees in Appendix IV to this rule ~~A of these regulations~~.

3.14.2.a. Additional certified copies of background investigation disclosure statements, or any portions thereof, ~~shall~~ must be supplied upon the request of the director.

3.14.2.b. Within sixty (60) days of receipt of a background investigation disclosure statement from a permit applicant, the director

~~shall~~ must advise the permit applicant if the background investigation disclosure statement is incomplete on its face, and ~~shall~~ must specify what additional information is required.

3.14.3. Fingerprinting Requirements.

Any ~~person~~ applicant required to be listed in the background investigation disclosure statement, ~~other than a non-supervisory employee required to be listed, shall~~ must be fingerprinted for identification and investigation purposes in accordance with procedures established by the director.

3.14.3.a. Completed fingerprint cards ~~shall~~ must be supplied by the applicant with the ~~filed~~ background investigation disclosure statement, when submitted. The applicant ~~shall~~ must arrange for the taking of fingerprints.

3.14.3.b. Fingerprints must be taken and verified by an employee of a police agency authorized to take fingerprints. (Note: Most local police departments and state police will provide this service. (Some charge a fee).

3.14.4. Exemptions.

The following persons are exempted from the requirement to submit a background investigation disclosure statement:

3.14.4.a. Any person who is an employee of any department, division, agency, commission or authority of the federal, ~~government or any~~ state, ~~or any~~ county, or municipal government or agency thereof.

3.14.4.b. Any person whose application or permit is solely for a ~~Class D-2, Class D-3, or~~ Class E, or Class F facility.

3.14.5. Contents of Background Investigation Disclosure Statement.

The background investigation disclosure statement ~~shall~~ must be filed on forms supplied by the director and ~~shall~~ must be completed in accordance with W. Va. Code §22-15-5 and include the following ~~information~~:

~~3.14.5.a. The full name, business address, home address, date of birth, and social security number of the following:~~

3.14.5.a. ~~3.14.5.a.A.~~ The applicant or any officer, director, or manager, ~~thereof: 3.14.5.a.B.~~ any shareholder owning five percent (5%) or more of its capital stock, beneficial or otherwise including ultimate parent corporations, and ~~3.14.5.a.C.~~ any other person conducting or managing the affairs of the applicant or the proposed permitted premises;

3.14.5.b. The disclosure statement must contain the full name, ~~and~~ business address, home address, date of birth, social security number, a description of the applicant's experience and credentials including any past or present permits for the collection, transportation, treatment, storage or disposal ~~of any company which collects, transports, treats, stores, or disposes~~ of solid waste or hazardous waste, that are or have been issued to or possessed by ~~in which~~ the applicant and any person or persons required to be listed by section 3.14.5.a of this rule ~~holds an equity interest~~;

~~3.14.5.e. A description of the experience and credentials in, including any past or present permits for, the collection, transportation, treatment, storage, or disposal of solid waste or hazardous waste possessed by the applicant, including any individual or entity listed in section 3.14.5.a of these regulations;~~

3.14.5.c. ~~3.14.5.g.~~ A listing of any agencies outside of West Virginia which had, or has regulatory responsibility over the applicant in connection with its collection, transportation, treatment, storage, or disposal of solid waste or hazardous waste;

3.14.5.d. An addendum form must be completed and filed with each disclosure statement for each relation (spouse, sibling, parent or child) engaged in the collection, transportation, treatment, storage or disposal of solid or hazardous waste; and

~~3.14.5.d. A listing, explanation and status of any notices of violation or prosecution, administrative orders, or permit revocations issued by any state or federal authority, which are pending or have resulted in a finding or a settlement of a violation of any law, regulation relating to the collection, transportation, treatment, storage, or disposal of solid waste or hazardous waste by the applicant, or any individual or entity listed in section 3.14.5.a of these regulations;~~

3.14.5.e. Any other information the director may require that relates to the competency, reliability or good character of the applicant, or as required by section 22-15-5 of the Code.

~~3.14.5.e. A listing, explanation and status of any judgement of liability or conviction which was rendered, pursuant to any state or federal statute or local ordinance, against the applicant, or any individual or entity listed in section 3.14.5.a of these regulations;~~

~~3.14.5.f. A listing of all labor, trade, and business associations in which the applicant was a member or with which the applicant had a collective bargaining agreement;~~

~~3.14.5.h. A listing of all persons employed by the applicant in its solid or hazardous waste operations in West Virginia and not otherwise required to be listed, and as to each, the full name, home address, date of birth, and social security number;~~

~~3.14.5.i. As to every person required to be listed in the disclosure statement, a completed Personal History Disclosure Form on forms supplied by the director, including information about family, education, and employment history; and~~

~~3.14.5.j. Any other information the director may require that relates to the competency, reliability, or good character of the applicant.~~

~~3.14.6. Notarization.~~

~~The disclosure statement shall be notarized.~~

3.14.6. ~~3.14.7.~~ **Signature.**

3.14.6.a. Background investigation disclosure statements ~~shall~~ must be signed by each of the following:

3.14.6.a.A. ~~3.14.7.a.~~ If of a corporation, by its president, its chairman of the board, any other chief executive officer thereof, its secretary and its treasurer.

3.14.6.a.B. ~~3.14.7.b.~~ If of a partnership, by each of its partners; if of a limited partnership, only by each of its general partners.

3.14.6.a.C. ~~3.14.7.c.~~ If of any other business concern, by its chief executive officer, its secretary, and its treasurer.

3.14.6.a.D. ~~3.14.7.d.~~ If of a natural person, by the person him, or herself.

~~3.14.8. Personal History Disclosure Forms shall be signed by the individual described thereon.~~

3.14.6.b. ~~3.14.9.~~ All signatures ~~shall~~ must be signed in ink and dated on original papers ~~but may be photocopies, typed, stamped or printed on copies~~. The name and address of the signatory ~~shall~~ must be typed, stamped, or legibly printed beneath each signature. All signatures must be notarized.

3.14.7. ~~3.14.10.~~ **Change of Information on Background Investigation Disclosure Statement.**

Where an applicant has an application pending before the director and any of the information required to be included in a background investigation disclosure statement changes, or any additional information must ~~should~~ be added after the filing of the statement, the applicant ~~or permittee shall~~ must provide that change of information to the director in writing within thirty (30) days of the change or addition.

3.14.8. ~~3.14.11.~~ **Reporting Requirements.**

Permittees must ~~shall~~ report to the director within thirty (30) days any changes or additions in the following information required to be included in the background investigation disclosure statement:

3.14.8.a. ~~3.14.11.a.~~ The name of the permittee or applicant;

3.14.8.b. ~~3.14.11.b.~~ The names or identities of any applicant or any officer, director, or manager, thereof, shareholder owning five percent (5) or more of its capital stock, beneficial or otherwise, including ultimate parent corporations, and any ~~or~~ other person conducting or managing the affairs of the applicant or the proposed permitted premises;

3.14.8.c. ~~3.14.11.c.~~ The name and business address of any company which collects, transports, treats, stores, or disposes of solid waste or hazardous waste in which the permittee acquires an equity interest:

3.14.8.d. ~~3.14.11.d.~~ A listing and explanation of any notices of violation, ~~administrative~~ orders, or license revocations issued by any state or federal authority:

3.14.8.d.A. 3.14~~.11.e.~~ Any judgement of liability or conviction rendered against the permittee or against any key employee, officer, director, or manager thereof, shareholder owning five percent (5%) or more of its capital stock, beneficial or otherwise, or other person conducting or managing the affairs of the applicant or the proposed permitted premises.~~; and~~

~~3.14.11.f. Any collective bargaining agreement entered into with a labor organization not previously listed on a disclosure statement, and any new membership in a trade or business association.~~

~~3.14.12. Any other changes in the information contained in a permittee's disclosure statement currently on file with the director shall be reported on an annual update to be filed with the director.~~

3.14.8.e. ~~3.14.13.~~ Changes of information required to be reported pursuant to section 3.14.9 ~~3.14.11~~ of ~~these regulations~~ this rule may be filed by letter~~, on amendment forms supplied by the director,~~ or on copies of applicable portions of background investigation disclosure statement forms. The person filing the report of change ~~shall~~ must swear to or affirm the truth of the information contained therein.

3.14.8.f. Filing of Changes of Information.

Changes of information must be filed by submitting an original and one certified copy to the director.

3.14.9. ~~3.14~~.14. Annual Updates.

The background investigation disclosure statement annual updates ~~shall~~ must be filed yearly on the anniversary of the permit issuance. It must be filed on ~~amendment~~ forms supplied by the director and must contain all changes including but not limited to deletions in officers, directors, managers, owners, companies, etc. that have occurred since the submittal of previous application. If there have been any additions to the officers, directors, managers, shareholders owning five percent (5%) or more of capital stock, beneficial or otherwise; general or limited partners; any person performing a function similar to the director; United States parent corporation, including the ultimate parent corporation; agents; or associates of the permittee, a background investigation disclosure statement application must be filed with the division including proper filing fees and fingerprint cards. ~~, or on copies of applicable portions of the disclosure statement form or Personal History Disclosure Form. Annual updates shall include a recapitulation of any changes previously reported pursuant to section 3.14.11 of these regulations.~~

~~3.14.15. Changes of information shall be filed by submitting an original and one certified copy to the director.~~

3.14.10. ~~3.14.16~~ Notarization of Annual Updates.

Annual updates ~~shall~~ must be notarized.

3.14.11. ~~3.14.17.~~ **Requirement to File New Background Investigation Disclosure Statement.**

Where an applicant or permittee has submitted multiple amendments to its background investigation disclosure statement, or the information concerning an applicant or permittee has undergone substantial change, or if the background investigation disclosure statement currently on file with the director is more than five (5) years old, the director ~~in his discretion,~~ may require the applicant or permittee to file a new background investigation disclosure statement.

3.14.12. ~~3.14.18.~~ **Additional Information; Duty to Cooperate.**

All applicants and permittees have the continuing duty to provide any assistance or information requested by the director and to cooperate in any inquiry, investigation, or hearing conducted by the director. If, upon issuance of formal request to answer any inquiry or produce information, evidence or testimony, and applicant or permittee ~~licensee~~ refuses to comply, the permit of that person may be denied or revoked by the director.

3.14.13. ~~3.14.19.~~ **Physical Evidence.**

Upon request, the applicant ~~shall~~ must supply physical evidence, including, but not limited to, photographs or handwriting exemplars of any person ~~individual~~ listed on the background investigation disclosure statement or any amendment thereof.

3.14.14. ~~3.14.20.~~ **Disqualification Criterion.**

No permit ~~shall~~ may be approved by the director unless the applicant demonstrates compliance with the provisions of W. Va. Code §~~20-5F-4(c)~~ 22-15-5.

3.14.15. ~~3.14.21.~~ **Cause for Permit Revocation.**

In addition to any other cause set forth elsewhere in ~~these regulations~~ this rule, any permit may be revoked for any violation of W. Va. Code §~~20-5F-4(c)~~ 22-15-5.

3.14.16. ~~3.14.22.~~ **Severance of Disqualifying Individuals.** Notwithstanding the disqualification of any applicant or permittee pursuant to these ~~regulations~~ rules, the director may issue or renew a permit if the applicant or permittee severs the interest of, or affiliation with, the person who would otherwise cause that disqualification.

3.14.16.a. ~~3.14.22.a.~~ Where the disqualifying individual is the owner of any equity interest or interest in the debt liability of the permittee or applicant, that person ~~he~~ must completely divest himself of that interest. Where immediate sale of the interest would work an economic hardship on the individual, the permittee or applicant, at the director's discretion may, ~~in his discretion~~, allow for divestiture over a period of time not to exceed one (1) year.

3.14.16.b. ~~3.14.22.b.~~ Arrangements such as blind trusts will be

acceptable only as part of divestiture arrangement under which the trustee is obliged to sell the disqualifying individual's interest within a period not to exceed two (2) years.

3.14.16.c. ~~3.14.22.c.~~ Before the ~~chief~~ director will issue or renew a permit to an applicant or permittee which has severed a disqualifying individual, the applicant or permittee must submit to the director an affidavit, sworn to by the chief executive officer, attesting to the severance of the disqualifying individual, and describing the terms, circumstances, and conditions of that severance. Any instruments pertaining to that severance (such as a trust agreement) ~~shall~~ must be submitted with the affidavit.

3.14.17. ~~3.14.23.~~ **Confidential Information.** Any information received pursuant to section 3.14 of this rule must ~~these regulations shall~~ be kept confidential by the division ~~Department~~ to the extent allowable by state law including W. Va. Code §29B-1-1.

3.14.18. ~~3.14.24.~~ **Convicted Persons Generally.** No permittee may ~~shall~~ knowingly hire as an officer or director any person who has been convicted of any of the offenses ~~crimes~~ enumerated in ~~these regulations or in~~ W. Va. Code §22-15-5(c) ~~20-5F-4(e)~~ without first submitting a background investigation disclosure statement to and obtaining the approval of the director. No permittee shall knowingly allow any person who has been convicted of any of the crimes enumerated in ~~these regulations or in~~ W. Va. Code §22-15-5(c) ~~20-5F-4(e)~~ to acquire an equity interest or debt liability interest without first submitting a background investigation disclosure statement to and obtaining the approval of the director.

3.14.18.a. ~~3.14.24.a.~~ In connection with any such request, the permittee must ~~shall~~ file with the director an amended background investigation disclosure statement containing the necessary information about the person, including any evidence the permittee wishes to bring forth demonstrating the person's rehabilitation.

3.14.18.b. ~~3.14.24.b.~~ The director may ~~shall~~ consider whether the person has affirmatively demonstrated rehabilitation, and may ~~shall~~ consider the factors set forth in determining whether to grant permission to the permittee to employ the person ~~individual~~ or allow him or her to acquire an interest in the permit.

3.14.18.c. ~~3.14.24.c.~~ Any permittee that violates the provisions of section 3.14 of this rule ~~these regulations~~ may be subject to having its permit revoked, notwithstanding the rehabilitation of the individual in question.

~~3.14.25. Environmental Compliance History. The chief or the director may refuse to grant any permit if he has reasonable cause to believe, as indicated by documented evidence, that the applicant, or any officer, director or manager, thereof, or shareholder owning twenty percent (20%) or more of its capital stock, beneficial or otherwise, or other person conducting or managing the affairs of the applicant or of the proposed permitted premises, in whole or part has exhibited a pattern of violating the environmental statutes or regulations of this State, any other state, or the federal government.~~

3.14.18.d. ~~3.14.26.~~ Mitigation and Restitution.

In the case of persons convicted of violating the criminal provisions of any federal or state environmental statute, ~~or~~ regulation, or rule, or persons convicted of any crime which involved the violation of such statutes ~~or~~ regulations, or rules, the director will not consider such person rehabilitated unless that person ~~he~~ has made all reasonable efforts to clean up or mitigate any environmental damage caused by the activities for which he or she was convicted, and to make restitution to any victims injured thereby.

3.15. Water Pollution Control Requirements.

For the purposes of leachate collection and treatment for wastewater and associated facility discharges, the wastewater facility and all appurtenances must meet the permit ~~information~~ requirements for such treatment as set out in W. Va. Code §§~~20-5, 20-5A, and 20-5F,~~ 22-1, 22-11, 22-12 and 22-15 and ~~all regulations~~ any rules promulgated thereunder. For the purposes of section 3.15 of ~~these regulations~~ this rule only, the requirements in 46 ~~C.S.R.~~ CSR 2, as amended, are hereby incorporated by reference. For landfills a single ~~document~~ permit must ~~will~~ be issued pursuant to section 3.5.2 of ~~these regulations~~ this rule.

3.16. Specific Application and Permitting Requirements.

3.16.1. Requirements for Landfills.

The applicant must submit all information required ~~under section 3 of~~ by ~~these regulations~~ this rule, as applicable, in order for an application to constitute ~~a completed~~ an administratively complete application.

3.16.2. Requirements for Incinerators.

3.16.2.a. General Requirements.

The applicant must submit the following information to the ~~chief~~ director in order to obtain a permit for a resource recovery, industrial, or municipal solid waste incinerator facility: Provided: That the installation, establishment or construction of a new municipal or commercial solid waste facility utilizing incineration technology for the purpose of solid waste incineration is prohibited, per Chapter 22, Article 15, Section 19 of the Code of W. Va., with the single exception of pilot projects.

3.16.2.a.A. All information required under sections 3.7.1 through 3.7.12, 3.7.13.a, 3.7.15, 3.7.16, 3.8.9, 3.9, 3.10.1.h, 3.10.1.i, 3.13, 3.14, and 3.15 of ~~these regulations~~ this rule;

3.16.2.a.B. Detailed drawings of waste storage areas and cleanup areas showing drainage schemes;

3.16.2.a.C. Recordkeeping procedures;

3.16.2.a.D. A waste management plan describing the handling and storage of the incoming waste and the disposition of the ash and other wastes

~~streams~~, alternative disposal options, screening procedures and handling options for screened waste, and cleanup procedures;

3.16.2.a.E. Dust control procedures;

3.16.2.a.F. A waste characterization plan;

3.16.2.a.G. A contingency plan indicating firefighting equipment, communication procedures with community agencies, and arrangements for emergency assistance; and

3.16.2.a.H. A start-up schedule.

3.16.2.b. Required Permits. At a minimum, two (2) permits will be required for incinerator facilities:

3.16.2.b.A. A permit from the West Virginia Division of Environmental Protection, Office of Air Quality ~~Pollution Control Commission~~; and

3.16.2.b.B. A solid waste permit for solid waste storage areas and support facilities from the West Virginia Division of Environmental Protection ~~Department of Natural Resources~~.

3.16.2.c. Exemptions.

3.16.2.c.A. Except for those facilities handling special wastes as provided in section 4.13 of ~~these regulations~~ this rule, incinerators having a design capacity of five hundred (500) pounds per hour or less are exempt from the permitting requirements of section 3.16 of ~~these regulations~~ this rule. However, such an incinerator must be designed and operated to meet the performance standards of section 5 of ~~these regulations~~ this rule and with all appropriate regulations or rules of the West Virginia ~~Air Pollution Control Commission~~ Office of Air Quality.

3.16.2.c.B. Incinerators burning only clean wood waste are exempt from all permitting requirements of section 3.16 of ~~these regulations~~ this rule. However, such incinerators must be designed and operated to meet the performance standards of section 5 of ~~these regulations~~ this rule and with all appropriate regulations or rules of the West Virginia ~~Air Pollution Control Commission~~ Office of Air Quality.~~:~~

3.16.3. Requirements for Transfer Stations.

3.16.3.a. General Requirements. The applicant must submit the following information to the ~~chief~~ director in order to obtain a permit for a transfer station:

3.16.3.a.A. All information required under sections 3.7.1 through 3.7.12, and sections 3.7.15, 3.7.16, 3.8.1, 3.8.9, 3.9, 3.13, 3.14, and 3.15 of ~~these regulations~~ this rule;

3.16.3.a.B. A description of the solid waste storage or loading areas;

3.16.3.a.C. A description of the areas of land for which a bond will be posted;

3.16.3.a.D. The location and use of buildings and related facilities which will be used in the operation; and

3.16.3.a.E. The location of scales and weigh stations to be used in the operation.

3.16.3.b. Operations Plan. An application to conduct transfer station activities ~~shall~~ must include an operations plan that includes the following:

3.16.3.b.A. A narrative description of the general operating plan for the proposed facility including:

3.16.3.b.A.(a) The origin, composition, and weight or volume of solid waste that is proposed to be received at the facility;

3.16.3.b.A.(b) The proposed operating and receiving hours for the facility;

3.16.3.b.A.(c) The process to be used at the facility;

3.16.3.b.A.(d) The daily operational methodology of the proposed process;

3.16.3.b.A.(e) The loading rate;

3.16.3.b.A.(f) The proposed capacity of the facility; and

3.16.3.b.A.(g) The expected life of the facility.

3.16.3.b.B. A plan for an alternative waste handling or disposal system during periods when the proposed facility is not in operation, including procedures to be followed in case of equipment breakdown (e.g., the use of standby equipment, extension of operating hours, and contractual agreements for diversion of municipal waste to other facilities); and

3.16.3.b.C. A plan for ~~hiring and~~ training equipment operators and other personnel in the design and operation of the facility.

3.16.3.c. Plan for Access Roads.

An application to conduct transfer station activities ~~shall~~ must contain designs, cross-sections, and specifications for access roads, including load limits, in accordance with section 4.5.6 of ~~these regulations~~ this rule.

3.16.3.d. Stormwater, Soil Erosion, and Sedimentation Control Plan.

An application to conduct transfer station activities ~~shall~~ must include a plan to manage surface storm water ~~and control~~ soil erosion and sedimentation control during the various phases of construction and operation on the permit area. Calculations indicating water quantities ~~shall~~ must be based on the 25-

year, 24-hour storm ~~rainfall~~ event. The plan ~~shall~~ must include fully dimensioned diversion ditches and indicate length, gradient, and cross-section for configuration by reach and capacities for ditch volume by reach. Calculations which are necessary to support design and siting ~~shall~~ must be included in the plan.

3.16.3.e. Groundwater Monitoring Plan.

If required by the ~~chief~~ director, the applicant ~~shall~~ must submit a groundwater monitoring plan to detect contamination, degradation or pollution of groundwater from the facility.

3.16.3.f. Soil Monitoring Plan.

If required by the ~~chief~~ director, the applicant ~~shall~~ must submit a soil monitoring plan, capable of detecting soil contamination from the facility.

3.16.3.g. Nuisance Control Plan.

An application to conduct transfer station activities ~~shall~~ must contain a plan to prevent hazards or nuisances from vectors, odors, noise, dust, and other nuisances not otherwise provided for in the permit application. The plan ~~shall~~ must provide for the routine assessment of vector infestation and ~~shall~~ must also provide for counter measures. The plan may include a control program involving a contractual arrangement for services with an exterminator.

3.16.3.h. Litter Control Plan.

An application to conduct transfer station activities ~~shall~~ must contain a plan to control litter.

3.16.3.i. Contingency Plan.

An application to conduct transfer station activities ~~shall~~ must contain a contingency plan relating to emergency procedures, hazard prevention, emergency equipment, and the implementation of the contingency plan.

3.16.4. Requirements for Recycling Facilities.

3.16.4.a. Applicability.

Recycling facilities whose only function is to accept at no charge, buy or transfer source separated recyclable material for reuse, resale or transfer for further processing are exempt from this rule. All other recycling facilities ~~shall~~ must provide notice and obtain a permit in accordance with the provisions of section 3.16.4 of ~~these regulations~~ this rule. Provided, That mixed waste recovery facilities, sludge processing facilities, and composting facilities are not considered recycling facilities nor considered to be reusing or recycling solid waste within the meaning of §22-15-2 "Recycling facility."

3.16.4.a.A. Recycling facilities existing on the effective date of ~~these regulations shall be~~ this rule are considered to have a valid permit from the ~~Department~~ division if the requirements of section 3.16.4.b. of ~~these~~

~~regulations~~ this rule is met.

3.16.4.a.B. Recycling facilities which are developed after the effective date of ~~these regulations shall be~~ this rule are considered to have a valid permit from the ~~Department~~ division upon fulfilling the requirements of sections 3.16.4.b and 3.16.4.c of ~~these regulations~~ this rule.

3.16.4.b. Notification of Activity.

3.16.4.b.A. Existing Qualifying Recycling Facilities.

Any existing recycling facility which qualifies for a permit under section 3.16.4.a of this rule must ~~shall~~ notify the ~~chief~~ director of its existence within ninety (90) days of the effective date of ~~these regulations~~ this rule.

3.16.4.b.B. New Qualifying Recycling Facilities.

Any new recycling facility which qualifies for a permit under section 3.16.4.a of ~~these regulations~~ this rule must notify the ~~chief~~ director of its existence prior to installation, establishment, construction, modification, or operation of the recycling facility.

3.16.4.b.C. Form of Notification.

Notification required by section 3.16.4.b of ~~these regulations~~ this rule ~~shall~~ must be made to the ~~chief~~ director on forms and in the manner prescribed by the director.

3.16.4.c. Recycling Facility ~~Permitting~~ Requirements. ~~(Reserved)~~

Except as provided under section 3.16.4.d of this rule, all persons owning or operating a recycling facility must:

3.16.4.c.A. Comply with the applicable prohibitions and location standards listed under section 3.1 of this rule;

3.16.4.c.B. Provide rapidly growing trees, shrubbery, fencing, berms, or other appropriate means at the facility to provide a wind break, screening from the surrounding area and to function as a barrier to discourage unauthorized access;

3.16.4.c.C. Post a sign in conformance with section 4.6.1.a.M of this rule;

3.16.4.c.D. Construct and maintain adequate shelter and sanitary facilities for all personnel;

3.16.4.c.E. Construct and maintain adequate drainage systems to prevent free-standing storm water;

3.16.4.c.F. Ensure that all leachate, waste water, and storm water is collected, treated and/or discharged in a manner that does not violate the water quality standards established under §22-11 or the regulations and rules promulgated thereunder;

3.16.4.c.G. All operations must be conducted within enclosed structure(s);

3.16.4.c.H. Receiving or storing of any hazardous waste material at a recycling facility is strictly prohibited;

3.16.4.c.I. Storage of recyclable materials outside of the enclosed structure must only be materials in bundles, bins or containers; or materials prepared for transportation;

3.16.4.c.J. All materials not used in the recycling process must be properly disposed of;

3.16.4.c.K. No material may be stored for more than sixty (60) days without written approval by the director;

3.16.4.c.L. All materials received by the facility must be accurately weighed or otherwise measured in accordance with the provisions of Title 110, Series 6A, sections 4.2 and 4.3 of the CSR.

3.16.4.d. Other Recycling Exemptions. ~~Requirements (Reserved)~~

The following recycling activities are not required to obtain a solid waste permit pursuant to this rule:

3.16.4.d.A. Nonprofit organizations accepting source-separated materials; and

3.16.4.d.B. Returnable container redemption centers operated by a dealer or distributor.

3.16.4.e. Resource Recovery Permitting Requirements. (Reserved)

3.16.4.f. Other Recycling Requirements. (Reserved)

3.16.5. Requirements for Construction/Demolition Landfills.

3.16.5.a. General Requirements.

All construction/demolition landfills ~~shall~~ must apply for and receive approval from the ~~chief~~ director prior to operation unless otherwise specified by section 3.16.5 of ~~these regulations~~ this rule. Not withstanding the provisions of section 3.16.5 of ~~these regulations~~ this rule, a Class D solid waste facility which qualifies as a commercial solid waste facility pursuant to W. Va. Code ~~§20-5F shall be~~ 22-15 is required to meet all appropriate landfill requirements specified by ~~these regulations~~ this rule.

3.16.5.b. Exemptions. The disposal of trees, stumps, woodchips, and yard waste generated from land clearing when generation and disposal occurs on the same property is exempt from the requirements of ~~these regulations~~ this rule. A landowner using construction/demolition waste material to improve the grade of the land if the area of that land does not exceed one-half acre is exempt from the requirements of these regulations, provided that the landowner does not fill natural wetlands, adheres to best management practices for

construction and maintains cover over the material. The construction/demolition waste material exemption for landowners does not apply to multiple one-half acre sites on the same parcel of land.

3.16.5.c. Class D-1 Solid Waste Facilities. A Class D-1 solid waste/facility permit ~~shall~~ must be obtained for the disposal of construction/demolition waste in cases where a noncommercial Class ~~D-2~~ solid waste facility general permit specified by section 3.16.5.d ~~or Class D-3 certificate of approval for disposal~~ is not applicable.

3.16.5.c.A. Except as provided in sections 3.16.5.c.A.(a) through 3.16.5.c.A.(d) of ~~these regulations~~ this rule, an applicant for a Class D-1 solid waste facility permit ~~shall~~ must meet all of the requirements in section 3 of ~~these regulations~~ this rule.

3.16.5.c.A.(a). In lieu of the test corings required in section 3.8.3 of ~~these regulations~~ this rule, available literature and field reconnaissance may be used to obtain the information required in section 3.8.3 of ~~these regulations~~ this rule.

3.16.5.c.A.(b) A minimum of one (1) downgradient monitoring well ~~shall~~ must be drilled to intersect the uppermost significant aquifer. If the permit area is between five (5) to ten (10) acres, a minimum of two (2) downgradient monitoring wells must ~~will~~ be drilled. If the permit area is greater than ten (10) acres, a minimum of three (3) monitoring wells must ~~will~~ be drilled.

3.16.5.c.A.(c) Class D-1 solid waste facilities are exempted from the requirements of section 3.8.4.d.A, 3.8.3.a.C.(d), and 3.8.3.a.C.(i) of these ~~regulations~~ this rule.

3.16.5.c.A.(d) Upon written request, the ~~chief~~ director may exempt a Class D-1 solid waste facility from compliance with a specific requirement in section 3 of ~~these regulations~~ this rule that the director ~~he~~ deems to be inappropriate or ~~he~~ may modify such requirement for that particular facility.

3.16.5.d. Class D General Permit. ~~-2 Solid Waste Facilities.~~

3.16.5.d.A. Coverage.

~~A person may apply for a Class D-2 solid waste facility permit in lieu of a Class D-1 solid waste facility permit if:~~ The director may issue a general permit to regulate noncommercial construction/demolition solid waste facilities except those covered by individual Class D permits.

3.16.5.d.B. Administration.

General permits may be modified, revoked, reissued or suspended in accordance with the applicable requirements of section 3.18 of this series.

3.16.5.d.B.(a) The director may require any person authorized by a general permit to apply for an individual permit. Any interested person may petition the director to take action under this subparagraph. Cases where

an individual permit may be required include the following:

3.16.5.d.B.(a)(A) The permittee is not in compliance with the conditions of the general permit;

3.16.5.d.B.(a)(B) A change has occurred in the availability of the best management practices or demonstrated technology for the control or abatement of problems applicable to the facility;

3.16.5.d.B.(a)(C) Specific regulations are promulgated for solid waste facilities covered by the general permit.

3.16.5.d.B.(b) The director may require any owner or operator authorized by a general permit to apply for an individual permit as provided in paragraph 3.16.5.d.B.(a) of this section, only if the owner or operator has been notified in writing that a permit application is required. This notice shall include a brief statement of reasons for this decision, an application form, a statement setting a time for the owner or operator to file the application, and a statement that on the effective date of the individual permit, the general permit as it applies to the individual permittee shall automatically terminate. The director may grant additional time upon request of the applicant.

3.16.5.d.B.(c) Any owner or operator authorized by a general permit may request to be excluded from the coverage of a general permit by applying for an individual permit. The owner or operator shall submit an application under section 3.5 with reasons supporting the request, to the director, no later than ninety (90) days after the general permit notice in accordance with section 3.21.

3.16.5.d.B.(d) Upon issuance of a general permit, the director shall cause to be published a notice of issuance as a Class I legal advertisement in a qualified daily or weekly newspaper and by any other means reasonably calculated to give notice of issuance to the persons affected by it.

~~**3.16.5.d.A.(a)** The disposal area does not exceed two (2) acres in size;~~

~~**3.16.5.d.A.(b)** The site preparation, disposal of construction/demolition material, regrading and revegetation can be completed within one hundred eighty (180) days from the date of permit issuance. Upon expiration of the permit only one (1) permit renewal may be granted by the chief. Such permit renewal period may not exceed one hundred eighty (180) days.~~

~~**3.16.5.d.A.(c)** The landfill site is not prohibited under section 3.2 of these regulations.~~

~~**3.16.5.d.B.** Except as provided in sections 3.16.5.d.B.(a) and 3.16.5.d.B.(b) of these regulations, Class D-2 solid waste facilities may be exempted by the chief from compliance with the requirements of section 3 of these regulations.~~

~~3.16.5.d.B.(a) An applicant for a Class D 2 solid waste facility permit shall comply with the requirements in section 3.5 and 3.6 of these regulations.~~

~~3.16.5.d.B.(b) Upon written notice from the chief, the applicant for a Class D 2 solid waste facility permit must publish notice of the draft permit in the form of a Class I legal advertisement in a newspaper of general circulation in the county or region in which the facility is proposed to be located. The advertisement must provide a minimum of ten (10) days for public review and comment upon such application. The applicant must meet all other requirements of section 3.20 of these regulations.~~

~~3.16.5.e. Class D-3 Solid Waste Facilities.~~

~~3.16.5.e.A. A landowner may apply for a Class D 3 solid waste facility certificate of approval for disposal in lieu of a Class D 1 or Class D 2 solid waste facility permit in order to use construction/demolition waste material to improve the grade of his land if the area of that land does not exceed one half (½) acre.~~

~~3.16.5.e.A.(a) A class D 3 landfill certificate of approval for disposal shall be valid for one hundred eighty (180) days from the date of its issuance.~~

~~3.16.5.e.A.(b) The chief or the director may limit the number of Class D 3 solid waste facility certificates of approval for disposal issued in a particular area of any county.~~

3.17. Draft Permit.

3.17.1. Once an application is complete, the ~~chief~~ director ~~shall~~ must tentatively decide whether to prepare a draft permit or to deny the application.

3.17.1.a. If the director tentatively decides to issue a general permit, he or she shall prepare a draft general permit that shall contain the following information:

3.17.1.a.A. All conditions under sections 3.5 and 3.6 and subsection 5.4.3;

3.17.1.a.B. Permit application requirements;

3.17.1.a.C. All compliance schedules;

3.17.1.a.D. All limitations, standards, prohibitions and conditions, and all variances that are to be included.

3.17.2. If the ~~chief~~ director decides to prepare a draft permit, a draft permit ~~shall~~ must be prepared that contains the following information:

3.17.2.a. All conditions required under section 3 and other applicable sections of this rule. ~~of these regulations;~~

3.17.2.b. All compliance schedules; and

3.17.2.c. Standards for treatment, storage, and disposal and other permit conditions under section 4 and/or 5 of ~~these regulations~~ this rule.

3.17.3. A fact sheet ~~shall~~ will be prepared by the ~~chief~~ director for every draft permit for each solid waste facility or activity and for every general permit. The fact sheet ~~shall~~ must briefly set forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. The ~~chief~~ director ~~shall~~ will send this fact sheet to the applicant and, upon request, to any other person.

3.17.4. The fact sheet ~~shall~~ must include, when applicable:

3.17.4.a. A brief description of the type of facility or activity which is the subject of the draft permit.

3.17.4.b. The type and quantity of wastes which are proposed to be or are being recycled, treated, stored, or disposed of, injected, emitted, or discharged. A description of the type of wastes ~~shall~~ must include, but not be limited to, the characteristics of the waste materials and the potential effects upon public health and the environment.

3.17.4.c. A brief summary of the basis for the draft permit conditions including references to applicable statutory or regulatory provisions.

3.17.4.d. A rationale explaining why any requested variances or alternatives to required standards do or do not appear justified.

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

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

3.17.4.e.B. The procedures for requesting a hearing and the nature of that hearing; and

3.17.4.e.C. Any other procedures by which the public may participate in the final decision.

3.17.4.f. The name and telephone number of a person to contact for additional information.

3.18. Permit Modification, Reissuance, Suspension, and Revocation.

3.18.1. Actions by the ~~Chief~~ Director.

3.18.1.a. ~~Permits may be modified, revoked and reissued, suspended, or revoked by the chief~~. Permits may ~~only~~ be modified, revoked, reissued, suspended, or revoked by the director for the reasons specified in section 3.18 of ~~these regulations~~ this rule.

3.18.1.a.A. When a permit is modified, only the conditions subject to modification are reopened. All other conditions of the permit will remain in effect for the duration of the permit.

3.18.1.a.B. The ~~chief~~ director may require additional information and, in the case of a major modification, may require submission of a new permit application.

3.18.1.b. If the ~~chief~~ director tentatively decides to modify a permit, ~~he~~ the director will prepare a modified draft permit and will follow the public notice procedures in section 3.21 of ~~these regulations~~ this rule. The ~~chief~~ director may request additional information or require the submission of an updated permit application from the applicant.

3.18.2. Causes for Modification or Permittee-Requested Reissuance of Permits.

3.18.2.a. Minor Modification.

Permits may be modified by the ~~chief~~ director at any time except for major modifications as listed in section 3.18.2.b of ~~these regulations~~ this rule. Minor modification does not require the preparation of a draft permit or the completion of the public notice procedures.

3.18.2.a.A. A minor modification may be approved by the ~~chief~~ director for a permittee proposing to increase the volume of solid waste accepted at the ~~his~~ facility by an amount of ten percent (10%) or less upon application in alternate years, unless such an increase requires a change in the classification of the facility.

3.18.2.b. Major Modifications. The following are causes for major modification, but not reissuance, of a permit unless the permittee so requests or agrees. These causes require the preparation of a draft permit and public notice and the opportunity for a public hearing as required by ~~these regulations~~ this rule unless an emergency is declared by the director.

3.18.2.b.A. The areal limits ~~capacity~~ of the waste disposal unit will be increased over the permitted disposal area ~~permitted capacity except as provided in section 3.18.2.a.A of these regulations~~;

3.18.2.b.B. The performance, efficiency, or longevity of the liner system or the final cover (cap) will be decreased;

3.18.2.b.C. The efficiency or performance of the leachate management system will be decreased ~~affected~~;

3.18.2.b.D. ~~A new gas treatment system will be installed or t~~ The efficiency or performance of a~~n existing~~ gas management system will be decreased;

3.18.2.b.E. The performance or operation of the surface water control system will be negatively ~~significantly~~ affected;

3.18.2.b.F. A decrease in the quality or quantity of data from any environmental monitoring system will occur;

3.18.2.b.G. A change in the design or configuration of the regraded area will occur;

3.18.2.b.H. The amount or type of post-closure financial assurance will change;

3.18.2.b.I. The ~~facility~~ permitted disposal area boundary will be significantly changed;

3.18.2.b.J. The post-closure land use of the property will change;

3.18.2.b.K. A remedial action to protect groundwater is necessary;

3.18.2.b.L. The permit is to be transferred to a new permittee ~~operator~~;

3.18.2.b.M. Operating authorization is being sought to place into service a structure constructed pursuant to a construction Q.A./Q.C. program; or

3.18.2.b.N. Other similar modifications as determined by the ~~chief~~ director.

3.18.3. Permit Suspension or Revocation.

3.18.3.a. Suspension. A solid waste facility permit may be suspended by order of the ~~chief or the~~ director for any of the following reasons:

3.18.3.a.A. Violation of the Act, this rule ~~these regulations~~ or any order of the ~~chief or the~~ director issued thereunder;

3.18.3.a.B. Interference with a representative of the ~~chief or the~~ director in the performance of ~~his~~ the director's duties;

3.18.3.a.C. Failure to adhere to the terms and conditions of the permit or any order issued by the ~~chief or the~~ director under this rule the Act or ~~these regulations~~; or

3.18.3.a.D. Discovery of failure in the application or during the permit issuance process to fully disclose all significant facts or the permittee's misrepresentation of any significant fact at any time.

3.18.3.b. Revocation. A solid waste facility permit may be revoked by order of the ~~chief or the~~ director for any of the following reasons:

3.18.3.b.A. Any deficiency at the solid waste facility constituting an imminent pollution, health, or safety hazard;

3.18.3.b.B. Persistent violation of ~~these regulations~~ this rule, permit terms and conditions, or orders issued by the ~~chief or the~~ director under the Act or ~~these regulations~~ this rule;

3.18.3.b.C. Discovery of failure in the application or during the permit issuance process to fully disclose all significant facts or the permittee's misrepresentation of any significant fact at any time; or

3.18.3.b.D. Any cause which would require disqualification pursuant to ~~these regulations~~ this rule from receiving a permit upon original application.

3.18.3.c. Effect of Permit Suspension or Revocation.

3.18.3.c.A. Suspension. All solid waste processing, recycling, or disposal activities and the receipt of any solid waste at the solid waste facility ~~shall~~ must cease immediately upon receipt of an order of suspension. Activities at the facility may recommence only after expiration of the order of suspension or upon revocation of that order by the issuing authority.

3.18.3.c.B. Revocation. All solid waste processing, recycling, or disposal activities and the receipt of any solid waste at the solid waste facility ~~shall~~ must cease immediately upon receipt of an order of revocation. The solid waste facility owner ~~shall~~ must submit either an application for a permit to close the facility or an application for new solid waste facility permit within the time specified in the order of revocation.

3.18.3.c.C. Environmental Monitoring and Control. Environmental monitoring and control activities specified in an order of suspension or in an order of revocation ~~shall~~ must continue at the solid waste facility for the duration of such order or until the authority who issued that order approves the cessation of such activities.

3.19. Transfer of Permit.

3.19.1. Transfer Requirements A permit issued by the ~~chief~~ director in accordance with the provisions of ~~these regulations~~ this rule may be transferred to another person. The person seeking to succeed to the rights granted by the permit ~~shall~~ must:

3.19.1.a. File a completed application with the ~~chief~~ director on forms and in a manner prescribed by the director, including background investigation disclosure statements as required by section 3.14 of ~~these regulations~~ this rule;

3.19.1.b. Provide performance bond coverage at least equal to that of the original permit in accordance with section 3.13 of ~~these regulations~~ this rule. It ~~shall~~ must be affirmatively demonstrated to the director that a bond in the full amount of that required for the permit will be kept in full force and effect before, during, and after the transfer of the permit rights;

3.19.1.c. Provide for public notice in accordance with section 3.21 of ~~these regulations~~ this rule; and

3.19.1.d. Obtain the ~~chief's~~ director's approval for the transfer of permit in writing.

3.19.2. Denial of Transfer. The ~~chief~~ director may refuse to transfer any permit and require that a new application for a solid waste facility permit be submitted prior to any transfer of permit responsibility or rights. Such refusal ~~shall~~ must be made in writing giving reasons therefor.

3.19.3. Operator Assignment. A permittee who wishes to assign the operation of the solid waste facility through an agreement, contract, or other legal instrument, to another party but retain the permit must request prior written approval on forms prescribed by the director. Such party ~~shall~~ must complete background investigation disclosure statement(s) as required under section 3.14 of ~~these regulations~~ this rule.

3.20. Permit Renewal.

3.20.1. Application for Permit Renewal. An application for the renewal of a valid permit that proposes no major modification to the permit ~~shall~~ must be on forms prescribed by the director and ~~shall~~ must contain the following:

3.20.1.a. The name and address of the permittee, location of the permit area including the county, and the permit number;

3.20.1.b. A statement that the terms and conditions of the permit are being satisfactorily met;

3.20.1.c. A statement that the operation is in compliance with the applicable environmental protection standards of the Act and all applicable rules and regulations;

3.20.1.d. A statement that the performance bond or other financial assurance for the operation will continue in effect.

3.20.1.e. A progress map of the same size and scale as the proposal map;

3.20.1.f. A certification that the information set forth in the form and progress map is true, ~~and~~ accurate, and complete; and

3.20.1.g. A notarized signature of the principal officer of the permittee in accordance with section 3.7.18 of ~~these regulations~~ this rule.

3.20.2. Public Notice. An applicant seeking to renew a valid permit who does not propose any major modification to that permit ~~shall~~ must meet the public notice requirements of section 3.21 of ~~these regulations~~ this rule. The ~~Department~~ division will receive comments only upon the contents of the application for renewal. A public hearing may be held at the discretion of the ~~chief~~ director.

3.20.3. Modification and Renewal. If an application is received which proposes a major modification to the existing permit and the renewal of that permit, it ~~shall~~ will be treated as a major modification pursuant to section 3.18.2.b of ~~these regulations~~ this rule in addition to the requirements of

section 3.20 of ~~these regulations~~ this rule.

3.21. Public Notice.

3.21.1. Scope.

3.21.1.a. Public notice ~~shall~~ must be given whenever either of the following actions have occurred:

3.21.1.a.A. A draft permit has been prepared; or

3.21.1.a.B. A hearing has been scheduled under section 3.23 of ~~these regulations~~ this rule.

3.21.2. Timing.

3.21.2.a. Public notice of the preparation of a draft permit ~~shall~~ must allow at least thirty (30) days for public comment. Upon request of the permittee, the public comment period will be extended for an additional thirty (30) days. Further extension of the comment period may be granted by the ~~chief~~ director for good cause shown but in no case may the further extension exceed an additional thirty (30) days.

3.21.2.b. Public notice of a public hearing ~~shall~~ must be given at least thirty (30) days before the hearing. Public notice of the hearing may be given at the same time as public notice of the draft permit and the two (2) notices may be combined.

3.21.2.c. A notice required under section 3.21 of ~~these regulations~~ this rule may be combined with that notice required under W. Va. Code ~~§20-5A~~ 22-11.

3.21.3. Methods. Public notice ~~shall~~ must be given by the following methods:

3.21.3.a. By mailing a copy of a notice to those persons whose names are included on a mailing list maintained by the ~~Department~~ division.

3.21.3.b. By the ~~chief~~ director publishing the public notice as a Class II legal advertisement in a qualified newspaper, as defined in W. Va. Code §59-3-1, serving the county, or counties where the facility will be located. The ~~chief~~ director may also require that legal advertisement be placed in newspapers of adjacent counties. The cost of the publication will be borne by the applicant who must send a certification of publication to the ~~Department~~ division within twenty (20) days after publication.

3.21.3.c. Any other method reasonably calculated to give actual notice of the action in question to the persons potentially affected by it, including press releases or any other forum or medium to elicit public participation.

3.21.4. Contents.

3.21.4.a. **Public Notice Contents.** All public notices issued under

section 3.21 of ~~these regulations~~ this rule ~~shall~~ must contain the following information:

3.21.4.a.A. The name and address of the office processing the permit action for which notice is being given;

3.21.4.a.B. The name and address of the permittee or permit applicant, and if different, of the facility or activity regulated by the permit, except in the case of general permits;

3.21.4.a.C. A brief description of the business conducted at the facility or activity described in the permit application or in the draft permit, when there is no application;

3.21.4.a.D. The name, address, and telephone number of a person from whom interested persons may obtain further information, including copies of the draft permit and the application;

3.21.4.a.E. A brief description of the comment procedures required by section 3.21.2 of ~~these regulations~~ this rule and the time and place of any hearing that will be held, including a statement of procedures to request a hearing (unless a hearing has already been scheduled) and other procedures by which the public may participate in the final permit decision;

3.21.4.a.F. A general description of the location of the proposed permit area including streams;

3.21.4.a.G. A clear and accurate location map. A map of a scale and detail found in the West Virginia General Highway Map will be the minimum standard for acceptance. The map size must be at a minimum two inches by two inches (2" x 2"). Longitude and latitude lines and a north arrow must be shown ~~indicated~~ on the map and such lines will cross at or near the center of the proposed permit area; and

3.21.4.a.H. A description of the activities covered in the application, including the class of the solid waste facility, the types, amounts, and origins of solid wastes to be handled, site improvements, and solid waste handling methods.

3.21.4.b. Other Public Notice Information. In addition to the contents required under section 3.21.4.a of ~~these regulations~~ this rule, public notices for hearings ~~shall~~ must contain the following information:

3.21.4.b.A. A reference to the date of previous public notices relating to the permit;

3.21.4.b.B. The date, time, and place of the hearing; and

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

3.22. Public Comments and Requests for Public Hearings.

3.22.1. During the public comment period provided under section 3.21.2

of ~~these regulations~~ this rule, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for a public hearing ~~shall~~ must be in writing and ~~shall~~ must state the nature of the issues proposed to be raised in the hearing. All comments ~~shall~~ must be considered in making the final decision and ~~shall~~ must be answered as provided in section 3.25 of ~~these regulations~~ this rule.

3.23. Public Hearings.

3.23.1. The ~~chief~~ director ~~shall~~ will hold a public hearing in the vicinity of the proposed facility whenever ~~he~~ the director finds, on the basis of requests, a significant degree of public interest on issues relevant to the draft permit. The ~~chief~~ director also may hold a public hearing at his or her discretion whenever such a hearing might clarify one or more issues involved in the permit decision.

3.23.2. Any person may submit oral or written statements and data concerning the draft permit. Reasonable limits may be set upon the time allowed for oral statements, and the submission of statements in writing ~~shall~~ will automatically be extended to ten (10) days after the close of any public hearings under section 3.23 of ~~these regulations~~ this rule.

3.23.3. A tape recording or written transcript of the hearing ~~shall~~ will be made available to the public, upon request.

3.24. Reopening of the Public Comment Period.

3.24.1. If any data, information, or arguments submitted during the public comment period raise substantial new questions concerning a permit, or if as a result of comments submitted by someone other than the permittee, or the ~~chief~~ director determines to revise any condition of the permit that had been sent to initial public notice, the ~~chief shall~~ director must take one or more of the following actions:

3.24.1.a. Prepare a new draft permit.

3.24.1.b. Reopen or extend the public comment period to give interested persons an opportunity to comment on the information or arguments submitted.

3.24.4.c. Conduct a public hearing.

3.24.2. Comments filed during the reopened comment period ~~shall~~ will be limited to the substantial new questions that caused its reopening. The public notice ~~shall~~ must define the scope of the reopening.

3.25. Public Participation File. The applicant for a permit for a solid waste facility, major modification, or closure ~~shall~~ must maintain a public participation file. The file ~~shall~~ must contain all written comments received during the public comment period, copies or tapes of transcripts of all meetings held by the applicant in response to any public comment, and a copy of the applicant's written response to all written comment letters received during the public comment period. These response letters ~~shall~~ must clearly

address each point in each comment letter including any actions taken by the applicant to address the comment. The response letters ~~shall~~ must be sent by certified mail and the signed return receipts ~~shall~~ must also be included in the public participation file. The complete public participation file ~~shall~~ must be submitted to the ~~chief~~ director by the applicant, within thirty (30) days of the end of the public comment period designed in the public notice. The ~~chief~~ director must approve the public participation file prior to permit issuance.

3.26. Public Availability of Information. Public availability of information relating to facility permits shall be governed by the provisions of W. Va. Code §29B.

3.27. Issuance and Effective Date of Permit.

3.27.1. After the close of the public comment period on a draft permit, the ~~chief shall~~ director must issue a final permit decision. The ~~chief shall~~ director must provide written notification of the ~~his~~ decision to the applicant and to each person requesting notice of the final permit decision. For the purposes of section 3.27 of ~~these regulations~~ this rule, a "final permit decision" means the final decision of the ~~chief~~ director to issue, deny, modify, suspend, revoke, ~~and~~ reissue, or terminate a permit.

3.27.2. If the final permit decision is to deny, suspend, revoke, modify, or terminate a permit, the ~~chief shall~~ director must provide the reasons therefor in ~~his~~ the director's written notification to the applicant. This notification ~~shall~~ will also include reference to the procedures for appealing the final permit decision.

3.27.3. A final permit decision ~~shall~~ becomes effective not less than thirty (30) days after the date of notice of the decision, unless an earlier date is requested by the applicant and agreed upon by the ~~chief~~ director.

3.28. Permit Review by the Director.

3.28.1. The director may refuse to grant a permit in accordance with the provisions of W. Va. Code ~~§20-5F-4(c)~~ 22-15-5(c). Written notification of such a refusal, and the reasons therefor, ~~shall~~ will be provided to the applicant.

3.28.2. Within thirty (30) days of ~~his~~ receipt of a permit application, compliance schedule, closure plan, or major modification application, the director ~~shall~~ will determine whether such application, schedule, or plan is complete (i.e., in proper order for technical review to commence) and ~~shall~~ will notify the applicant of the ~~his~~ determination in writing. If the director determines that such application, schedule, or plan is not complete, the notification ~~shall~~ will advise the applicant of the deficiencies that require remedy.

3.29. Appeals. Appeal of permit decisions ~~shall~~ must be conducted in accordance with the provisions of W. Va. Code ~~§20-5F-7~~ 22-15-16.

§47-38-4. Landfill Performance Standards.

4.1. Enforcement of Landfill Performance Standards.

Enforcement of the performance standards in section 4 of ~~these regulations shall~~ this rule must be conducted in accordance with the provisions of W. Va. Code §~~20-5F~~ 22-15-1 et sec.

4.2. Solid Waste Assessment Fees. Permittees are required under the provisions of W. Va. Code §~~20-5F-5a~~ 22-15-11 and 110 ~~C.S.R.~~ CSR 6A of the W. Va. Department of Tax and Revenue to pay solid waste assessment fees.

4.3. Landfill Manager ~~Operator~~ Training and Certification. ~~(Reserved).~~

4.3.1. Qualifications. Operation of every commercial solid waste disposal facility "landfill," must be conducted under the direction of an individual who has authority and knowledge to make and implement decisions regarding operating conditions at the facility (called in this subsection an "individual in responsible charge") and who has attended and successfully completed a course of instruction in solid waste management procedures and practices. Such course of instruction must be approved in writing by the director.

4.3.2. Applicability. Individuals in responsible charge of existing or new landfills and new individuals in responsible charge of existing landfills must attend and successfully complete a course of instruction within twelve (12) months from the effective date of this rule.

4.3.3. Instruction Course Criteria. An approved course of instruction must include at a minimum, the role of sanitary landfills in integrated solid waste management, basics of site selection, complying with design requirements, waste acceptance and screening, leachate management, landfill gas management, landfill operational techniques, environmental/operational and permit compliance inspections, field exercise and homework assignment, landfill economics, closure and post-closure care, state/federal regulations, permitting requirements and a written examination sanctioned by an internationally recognized certification organization or an accredited college or university program.

4.3.4. Certificate Requirement. Successful completion of an approved course of instruction by an individual in responsible charge must include passing the written examination and the award of a certificate as a certified manager; and

4.3.4.a. The individual must demonstrate that he or she has remained current in the field of solid waste management by attending at least thirty (30) contact hours of continuing education every three years and providing proof thereof upon request.

4.4. ~~Operations Manual~~ Operating Record.

Every facility must develop and maintain, on site, or at an alternative location approved by the director an ~~operations manual~~ operating record that contains the information listed in this section as it becomes available. Existing facilities must develop such a manual ~~record~~ within ninety (90) days of the effective date of ~~these regulations~~ this rule, unless granted a written

extension of preparation time by the ~~chief~~ director. New facilities must have a record ~~must~~ in place on the first day of business operations. The record must ~~manual shall~~ include a table of contents which outlines, by section title and page number, the discussion required by ~~these regulations~~ this rule.

4.4.1. General Information.

~~The Operations Manual must identify the following items~~ The items listed in this section may be waived if those items are included in the facility permit, renewals, modifications and other similar permit documents or application thereto, provided that the permit and/or application must be kept in the operating record file including:

4.4.1.a. The facility title;

4.4.1.b. The engineering consultants;

4.4.1.c. The name and address of the facility owner and the name of the facility operator, the permit holder or permittee;

4.4.1.d. The location of the facility by latitude and longitude and county;

4.4.1.e. The proposed area of waste fill;

4.4.1.f. The anticipated life of the facility and its disposal capacity;

4.4.1.g. The waste contributors, including all municipalities and major commercial and industrial customers;

4.4.1.h. The waste type and quantity and origin to be disposed; and

4.4.1.i. Any exemptions requested from the ~~Department~~ Division.

4.4.2. Monitoring.

The ~~manual~~ record must include a description of required groundwater, surface water, gas, unsaturated zone, and leachate monitoring programs developed in accordance with the approved Q.A./Q.C. plan and the provisions of section 4.4 of ~~these regulations.~~ this rule, including:.

4.4.3. Operations.

The ~~manual~~ record must describe the daily operations of the facility including a discussion of the following items:

4.4.3.a. The timetable for the phases of facility development;

4.4.3.b. The waste types accepted or excluded;

4.4.3.c. Typical waste handling techniques, and methods for handling unusual waste types;

4.4.3.d. Procedures for excluding the receipt of hazardous waste;

4.4.3.e. The hours of operation;

4.4.3.f. Traffic routing;

4.4.3.g. Drainage and erosion controls;

4.4.3.h. Windy, wet, and cold weather disposal operations;

4.4.3.i. Fire protection equipment;

4.4.3.j. Anticipated staffing requirements;

4.4.3.k. Methods for disease vector, dust, and odor control;

4.4.3.l. Daily clean-up;

4.4.3.m. Direction of filling;

4.4.3.n. Salvaging;

4.4.3.o. Recordkeeping and reporting requirements ~~.~~ as follows:

The permittee must record, retain and maintain copies of the documents listed in this section in the facility operating record, and all information contained in the operating record must be furnished upon request to the director or be made available at all reasonable times for inspection by the director. Those documents include, but are not limited to the following:

4.4.3.o.A.(a) Any location standard demonstrations required by sections 3.1 and 3.2 of this rule;

4.4.3.o.A.(b) A listing of any inspection records, training procedures, and notification procedures required by section 4.6.1.f of this rule;

4.4.3.o.A.(c) Gas Monitoring results from monitoring and any remediation plans developed in accordance with section 4.10 of this rule;

4.4.3.o.A.(d) Design documentation for the placement of leachate or gas condensate in the SWLF as required by section 4.13.3 of this rule;

4.4.3.o.A.(e) Any demonstration, certification, finding, monitoring, testing, or analytical data required by section 4.11 of this rule;

4.4.3.o.A.(f) Any closure and post-closure care plans and any monitoring, testing or analytical data as required by sections 4.11 and/or 6 of this rule.

4.4.3.o.A.(g) Any cost estimates and financial assurance documentation required by sections 3.7.10 and 3.13 of this rule.

4.4.3.o.A.(h) Any other demonstration, certification, finding, monitoring, testing, or analytical data required by this rule;

4.4.3.o.B. Alternative Recordkeeping.

4.4.3.o.B.(a) The director can set alternative schedules for recordkeeping and notification requirements as specified in sections 4.4.3 and 4.4.5.e, except for the notification requirements in sections 3.2.7.b and 4.11.3.g.A.

4.4.3.p. Parking for visitors, users, and employees;

4.4.3.q. A listing of the backup equipment available; and

4.4.3.r. A listing of local emergency response personnel.

4.4.4. Design.

A general discussion of the design of the major engineering features, such as base grade configuration and relationships to subsurface conditions, anticipated waste types and characteristics, phases of development, traffic routing, liner design, facility monitoring, final capping, closure, ~~and~~ long-term post-closure care and other similar design features.

4.4.5. Appendix.

An appendix ~~shall~~ must be included which lists the references used and includes any additional data not previously presented, supplemental design calculations, material specifications, operating agreements such as draft leachate treatment agreements or signed soil borrow agreements, documents related to long-term post-closure care funding, and other appropriate information.

4.5. Minimum Design Criteria for Landfills.

4.5.1. Design Capacity.

The minimum design capacity of a landfill must equal or exceed the expected volume of solid waste and daily and intermediate cover that will be disposed of at the facility within ten (10) years after operations begin. Expansions of existing facilities are not subject to the ten-year minimum design capacity requirement.

4.5.2. Drainage and Sediment Control Plan.

4.5.2.a. Stream Channel Diversions.

4.5.2.a.A. Design Capacity.

4.5.2.a.A.(a) The design capacity of channels for temporary and permanent channel diversions must ~~shall~~ be at least equal to the capacity of the unmodified stream channel immediately upstream and downstream of ~~for~~ the diversion.

4.5.2.a.A.(b) The temporary and permanent channel diversions must ~~are to~~ be designed so that the combination of channel, bank, and floodplain configuration is adequate to pass safely the peak runoff of a 10-year, 24-hour storm ~~rainfall event~~ for a temporary channel diversion and a 100-year, 24-hour storm ~~rainfall event~~ for a permanent channel diversion.

4.5.2.a.B. Removal of Temporary Diversions.

Temporary channel diversions ~~shall~~ must be removed when they are no longer needed to achieve the purpose for which they were approved as long as downstream facilities which were being protected are modified or removed.

4.5.2.a.C. Stream Channel Specifications. The drainage and sediment control plan ~~shall~~ must contain the following plans, design data, and specifications concerning stream channels:

4.5.2.a.C.(a) A "stream channel design computation sheet" to be completed for each proposed temporary or permanent stream channel diversion;

4.5.2.a.C.(b) Construction plans showing:

4.5.2.a.C.(b)(A) A plan view of the area showing centerline profiles of existing stream channel and proposed location of the temporary or permanent stream channel (drawn to scale);

4.5.2.a.C.(b)(B) Profiles along the centerline of the existing and temporary or permanent stream channel showing original ground, proposed and existing stream bottom (drawn to scale);

4.5.2.a.C.(b)(C) A cross-section showing original ground limits, bottom width, side slopes, depth of flow, floodplain configuration; and

4.5.2.a.C.(b)(D) A detailed sequence of the installation of temporary or permanent stream channel diversions;

4.5.2.a.C.(c) Construction specifications; and

4.5.2.a.C.(d) Maintenance schedule and procedures for maintenance.

4.5.2.b. Diversions.

4.5.2.b.A. Run-on Control System.

~~A landfill permittee must design, construct, operate, and maintain a run-on control system capable of preventing flow onto any part of the disposal area during peak discharge from at least a 25 year, 24 hour rainfall event~~.

4.5.2.b.A.(a) Permittees of all SWLFs must design, construct, operate, and maintain:

4.5.2.b.A.(b) A run-on control system capable of preventing flow onto any part of the disposal area including the active portion of the SWLF during peak discharge from at least a 25-year, 24-hour storm.

4.5.2.b.B. Design Capacity.

Diversions ~~shall~~ must have the capacity to pass safely the peak discharge from the contributing watersheds from a 25-year, 24-hour storm ~~rainfall event~~.

4.5.2.b.C. Diversion Specifications.

The drainage and sediment control plan ~~shall~~ must contain the following plans, design data, and specifications concerning diversions:

4.5.2.b.C.(a) A "Diversion Design Computation Sheet" must ~~to~~ be completed for each proposed diversion;

4.5.2.b.C.(b) Construction plans showing:

4.5.2.b.C.(b)(A) A ~~surveyed~~ profile based upon survey along the centerline of the diversion showing original ground line and proposed diversion bottom;

4.5.2.b.C.(b)(B) A channel cross-section showing the original ground line, bottom width, side slopes, depth of flow, freeboard, and other pertinent information drawn to scale;

4.5.2.b.C.(b)(C) The type of soil in which the diversion will be excavated. Either the soil ~~shall~~ must be sampled and classified at intervals of five hundred (500) feet or a demonstration of erosion potential based on existing soils information ~~shall~~ must be made; and

4.5.2.b.C.(b)(D) The type and design of the outlet proposed for each diversion;

4.5.2.b.C.(c) Maintenance schedule and procedures for maintenance; and

4.5.2.b.C.(d) Construction and vegetation specifications.

4.5.2.c. Sediment Control.

Sediment control structures ~~shall~~ must be constructed in appropriate locations in order to control sedimentation. All runoff from the disturbed area ~~shall~~ must pass through a sedimentation pond or ponds ~~(e.g., an earthen embankment, excavated ponds, gabions, and cribs)~~. All sediment control structures must be designed, constructed, and maintained in accordance with the specifications contained in ~~contents of~~ the U.S. Soil Conservation Service's "Erosion and Sediment Control Handbook for Developing Areas in ~~(~~West Virginia~~)~~" unless the ~~chief~~ director approves the use of an equivalent handbook of guidance, or as otherwise specified in this rule.

4.5.2.c.A. Design and Construction Requirements.

4.5.2.c.A.(a) All sediment control structures ~~shall~~ must be designed, constructed and certified prior to the commencement of any earthmoving or grading activities in upgradient areas which may contribute runoff to such control structures. Any change to the approved control structures made during construction ~~shall~~ must be indicated on "as-built" plans showing the approved design, the changes made, and surveyed reference points. All "as-built" plans ~~shall~~ must be submitted to the ~~chief~~ director.

4.5.2.c.A.(b) All sediment control structures ~~shall~~ must be located as near as possible to the disturbed area. All sediment control structures ~~shall~~ must be located out of perennial streams unless otherwise approved by the director.

~~**4.5.2.c.A.(c)** All sediment control structures shall have the capacity to store 0.125 acre-feet of sediment for each acre of disturbed area in the structure's watershed.~~

~~**4.5.2.c.A.(d)** All discharges from sediment control structures shall not cause a violation of state and federal water quality standards and shall meet effluent limitations.~~

4.5.2.c.A.(e) ~~**4.5.2.c.A.(c)**~~ All sediment control structures ~~shall~~ must have ~~the~~ a sediment capacity ~~to store~~ of 0.125 acre-feet ~~of sediment~~ for each acre of disturbed area in the structure's watershed. In addition to the sediment capacity, the sediment control structure must have the detention capacity to store a 2-year, 24-hour frequency storm. The water stored from this storm must be released through a nonclogging dewatering device that allows the stored volume of water to be evacuated within a 7-day to 8-day period. The elevation of the nonclogging dewatering device must not be lower than the maximum elevation of the designed sediment storage volume, and also satisfy the storm water provisions of the Federal Clean Water Act, as reflected in §22-11 of the Code of W. Va. and any rules promulgated thereunder.

4.5.2.c.A.(f) ~~**4.5.2.c.A.(d)**~~ All discharges from sediment control structures ~~shall~~ must not cause a violation of state and federal water quality standards and ~~shall~~ must meet all effluent limitations as reflected in §22-11 of the Code of W. Va. and any rules promulgated thereunder.

4.5.2.c.A.(g) ~~**4.5.2.c.A.(e)**~~ All sediment control structures ~~shall~~ must be designed, constructed, and maintained to prevent short-circuiting.

4.5.2.c.A.(h) ~~**4.5.2.c.A.(f)**~~ All sediment control structures ~~shall~~ must be cleaned out when the sediment accumulation reaches sixty percent (60%) of the ~~this~~ design sediment capacity. The ~~e~~ clean-out elevation ~~shall~~ must be indicated on the plans submitted for the structure. Sediment removal and disposal ~~shall~~ must be done in a manner that minimizes adverse effects on surface water and groundwater quality.

4.5.2.c.A.(I) ~~**4.5.2.c.A.(g)**~~ All sediment control structures must ~~shall~~ be designed, constructed, and maintained to meet the following safety standards:

4.5.2.c.A.(I)(A) ~~4.5.2.c.A.(g)(A)~~ An adequate structural foundation must be provided for all structures through the clearing of trees and brush and the exclusion of organic material. Earthen materials used in the construction ~~shall~~ must be free of trees, roots, brush, frozen soil, organic materials, coal processing materials ~~waste~~, construction waste, and other debris. All earthen materials must be properly compacted to prevent excessive settlement.

4.5.2.c.A.(I)(B) ~~4.5.2.c.A.(g)(B)~~ Sediment control structures ~~which normally impound water to an elevation of less than five (5) feet above the upstream toe of the structure and have a normal storage volume of less than twenty (20) acre feet~~ must provide a combination of principal and emergency spillways that will safely discharge a minimum 25-year, 24-hour storm ~~rainfall event~~ without overtopping of the structure. ~~The principal spillway requirements may be waived by the chief if the emergency spillway is designed to safely by pass the peak rate of discharge of a 25 year, 24 hour rainfall event in an open channel constructed of non erodible material and capable of maintaining sustained flows. Where storage excavated below the natural stream level into natural ground comprises at least seventy percent (70%) of the total normal storage volume of the pond, the combination of principal and emergency spillways must safely discharge a minimum 10 year, 24 hour rainfall event without overtopping of the structure.~~ There must be no outflow through the emergency spillway during the passage of a 10-year, 24-hour frequency storm through the sediment control structure. All spillways must discharge an adequate distance beyond the downstream toe of the structure to ~~in~~ a natural drainway to prevent erosion of the downstream toe.

4.5.2.c.A.(I)(C) The contributing drainage area(s) for a sediment control structure must not exceed 200 acres.

4.5.2.c.A.(I)(D) The minimum diameter of the principal spillway and the discharge conduit must be twelve (12) inches.

4.5.2.c.A.(I)(E) ~~4.5.2.c.A.(g)(C)~~ A minimum difference in elevation of one and one-half (1.5) feet between the top of the principal spillway and the bottom of the invert of the emergency spillway~~s~~ must be provided. A minimum difference in elevation of one (1) foot of freeboard between the maximum design flow elevation in the emergency spillway ~~or exit channel~~ and the top of the settled embankment must be provided.

4.5.2.c.A.(I)(F) The vertical distance between the lowest point along the centerline of the sediment control structure and the top (crest) of the sediment control structure must not exceed twenty-five (25) feet.

4.5.2.c.A.(I)(G) Appropriate barriers must be provided to control seepage along the conduits that extend through the embankment.

4.5.2.c.A.(I)(H) All inspection reports and engineering certifications must be provided to the director

4.5.2.c.A.(I)(I) The sediment control structure must possess a minimum embankment width of ten (10) feet.

4.5.2.A.(I)(J) The embankment must be designed and constructed with a minimum static safety factor of 1.5.

~~4.5.2.c.A.(I)(K) 4.5.2.c.A.(g)(D) Stabilization and revegetation of the embankment must be provided.~~ The embankment must be stabilized and revegetated upon construction.

4.5.2.c.A.(j) ~~4.5.2.c.A.(h)~~ Sediment control structures ~~which impound water to an elevation of more than five (5) feet above the upstream toe of the structure and have a normal storage volume of twenty (20) acre feet or impound water to an elevation of twenty (20) feet or more above the upstream toe of the structure shall~~ must be ~~constructed,~~ inspected~~,~~ and closed in accordance with section 6 of ~~these regulations~~ this rule. ~~In addition to the requirements of section 6 of these regulations, the following minimum standards shall be adhered to.~~

~~4.5.2.c.A.(h)(A) An appropriate combination of principal and emergency spillways shall be provided to discharge safely the runoff resulting from a 100 year, 6 hour rainfall event. All spillways must discharge an adequate distance beyond the downstream toe of the structure in a natural drainway to prevent erosion of the downstream toe.~~

~~4.5.2.c.A.(h)(B) The embankment shall be designed and constructed with a static safety factor of at least 1.5.~~

~~4.5.2.c.A.(h)(C) Appropriate barriers shall be provided to control seepage along the conduits that extend through the embankment.~~

~~4.5.2.c.A.(h)(D) All inspection reports and approvals shall be provided to the chief.~~

4.5.2.c.A.(k) ~~4.5.2.c.A.(I)~~ Any sediment control structure that is an artificial barrier or obstruction, including any works appurtenant to it and any reservoir created by it, which is or will be placed, constructed, enlarged, altered or repaired so that does or will impound or divert water and: ~~that~~

4.5.2.c.A.(k)(A) ~~I~~ Is or will be twenty-five (25) feet or more in height from the natural bed of the ~~a~~ stream or watercourse measured at the downstream toe of the barrier and which does or can impound fifteen (15) acre-feet or more of water; or

4.5.2.c.A.(k)(B) ~~that I~~ Is or will be six (6) feet or more in height from the natural bed of the ~~such~~ stream or watercourse measured at the downstream toe of the barrier and which does or can impound fifty (50) acre-feet or more of water; or is, by definition, a "dam" as defined in W. Va. Code §22-14 is subject to regulation under the provisions of W. Va. Code, §22-14-1 et seq. ~~20-5D~~.

4.5.2.c.A.(l) ~~4.5.2.c.A.(j)~~ **Discharge Structures.**

Discharge from temporary or permanent sediment control structures, diversions, or stream channel diversions ~~shall~~ must be controlled by energy dissipaters, riprap channels or other devices approved by the ~~chief~~ director to reduce

4.5.2.c.B.(a) Excavated Sediment Pond (Dugout Type).

There is no required abandonment procedure for excavated ponds unless they have an embankment. If they have an embankment, they ~~shall~~ must follow the abandonment procedures outlined in section 4.5.2.c.B.(b) of ~~these regulations~~ this rule.

4.5.2.c.B.(b) Embankment-Type Sediment Control Structures ~~Dams~~; Embankment-Type Excavated Sediment Control Structures ~~Dams~~; Crib and Gabion Control Structures.

Sediment control structures ~~dams~~ and all accumulated sediment above the structure must ~~dam shall~~ be removed from the natural drainway if they are built across it. Sediment control structures ~~Dams~~ adjacent to natural drainways ~~shall~~ must be abandoned by diverting the entrance channel to the natural drainways providing that vegetation has been established on-site, thus preventing any future surface runoff from entering the abandoned sediment control structure ~~impoundment~~. When sediment control structures ~~dams~~ are removed, the natural drainway ~~shall~~ must be returned to its original profile and cross-section as near as practical. An original profile and cross-section view for the channel ~~shall~~ must be submitted with the drainage plan. The channel sides and bottom ~~shall~~ must be rock riprap. The riprap ~~shall~~ must extend up to the top of the channel. The riprap requirement may be waived where the bottom and sides of the channel consist of bedrock. Provisions must be made to control sediments during ~~dam~~ removal of the sediment control structure and any necessary stream channel work.

4.5.2.c.B.(c) Revegetation of Disturbed Areas. All areas disturbed during abandonment of a sediment control structure ~~shall~~ must be seeded and mulched immediately to revegetate and stabilize the disturbed areas.

4.5.2.d. Run-off Control System.

4.5.2.d.A. All permittees must design, construct, operate, and maintain a run-off control system capable of flow collections and controlling from any portion of the landfill to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

4.5.2.d.B. Run-off from all portions of the landfill, including the active portion must be handled in accordance with Chapter 22, Article 15 of the Code of W. Va.

4.5.3. Access Roads.

4.5.3.a. Access Road Construction Plans.

Construction plans for an access road (i.e., a road used for facility access or for the haulage of solid waste to the facility) ~~shall~~ must contain the following:

4.5.3.a.A. A plan view drawn to scale showing the station baseline, the location of each culvert with the drainage flow direction, the location of each intermittent or perennial stream with its flow direction, and

Construction plans for an access road (i.e., a road used for facility access or for the haulage of solid waste to the facility) ~~shall~~ must contain the following:

4.5.3.a.A. A plan view drawn to scale showing the station baseline, the location of each culvert with the drainage flow direction, the location of each intermittent or perennial stream with its flow direction, and other data pertinent to the construction of the access road.

4.5.3.a.B. A ~~surveyed~~ profile based upon survey drawn to scale (the scale should be no greater than 1 inch = 100 feet horizontal and 1 inch = 50 feet vertical) showing the road surface, the location and size of culverts, station elevations, original ground, and percent grades.

4.5.3.a.C. A cross-section of the access road showing culverts and their slopes, fill materials, original ground, ditches, and sediment control devices.

4.5.3.a.D. A structure computation sheet and a cross-section showing all data pertinent to the crossing of each intermittent or perennial stream.

4.5.3.a.E. Construction specifications -- covering excavation, selection and placement of materials, vegetative protection against erosion, road surfacing, drainage, and sediment control -- that incorporate the design criteria set forth in section 4.5.3.b of ~~these regulations~~ this rule.

4.5.3.a.E.(a) All grades referred to in section 4.5.3.b of ~~these regulations~~ this rule ~~shall~~ must be subject to a tolerance of two percent (2%). All linear measurements referred to in section 4.5.3.b of ~~these regulations~~ this rule ~~shall~~ must be measured from the horizontal and ~~shall~~ must be subject to a tolerance of five percent (5%).

4.5.3.a.E.(b) All primary access roads for the facility, including those leading to the active area, must be designed for all-weather operation in accordance with standards ~~promulgated by~~ of the West Virginia ~~Department~~ Division of Highways.

4.5.3.b. Access Road Construction.

4.5.3.b.A. Grades.

The grading of an access road ~~shall~~ must be such that:

4.5.3.b.A.(a) The overall grade ~~shall~~ must not exceed ten percent (10%).

4.5.3.b.A.(b) The maximum pitch grade ~~shall~~ must not exceed fifteen percent (15%) for three hundred (300) feet in each one thousand (1,000) feet of road construction. The intersection of the access road with an existing highway must be designed to provide sufficient sight distance and minimum interference with traffic on the highway.

4.5.3.b.A.(c) The surface ~~shall~~ must pitch toward the ditchline

at a ~~the~~ minimum rate of one-half (½) inch per foot of surface width or crowned at the minimum rate of one-half (½) inch per foot of surface width as measured from the centerline of the access road.

4.5.3.b.B. Curves.

The grade on switchback curves ~~shall~~ must be reduced to less than the approach grade and must ~~should~~ not be greater than ten percent (10%);

4.5.3.b.C. Cut Slopes.

Cut slopes must ~~should~~ not be steeper than 1:1 in soils or 1:4 in rock.

4.5.3.b.D. Drainage Ditches.

A ditch ~~shall~~ must be provided on both sides of a throughout and on the inside shoulder of a cutfill section, with ditch relief culverts being spaced according to grade. Water ~~shall~~ must be intercepted or directed around and away from a switchback. All ditchlines ~~shall~~ must be capable of passing the peak discharge of a 10-year, 24-hour storm ~~rainfall event~~. Where superelevation to the inside of a curve will improve the safety of the access road, such as in the head of a hollow, a ditchline may be located on the outside shoulder of the cutfill section provided that the ditchline is designed so that it will remain stable and that drainage control in accordance with the Act is also provided for water on the outside of the curve.

4.5.3.b.E. Drainage Culverts.

Ditch relief culverts ~~shall~~ must be installed wherever necessary to ~~insure~~ ensure proper drainage of surface water beneath or through the access road.

4.5.3.b.E.(a) Culverts ~~shall~~ must be installed in accordance with the following spacings:

4.5.3.b.E.(a)(A) For a road grade of zero to five percent (0% to 5%), the spacing ~~shall~~ must be three hundred to eight hundred (300 to 800) feet;

4.5.3.b.E.(a)(B) For a road grade of five ~~six~~ to ten percent (5 ~~6%~~ to 10%), the spacing ~~shall~~ must be two hundred to three hundred (200 to 300) feet; and

4.5.3.b.E.(a)(C) For a road grade of ten ~~eleven~~ to fifteen percent (10 ~~11%~~ to 15%), the spacing ~~shall~~ must be one hundred to two hundred (100 to 200) feet.

4.5.3.b.E.(b) Culverts ~~shall~~ must cross the access road at a thirty (30) degree angle downgrade with a minimum grade of three percent (3%) from inlet to outlet, except in the conveyance of intermittent or perennial streams where the pipe ~~shall~~ must be straight and coincide with the normal flow.

4.5.3.b.E.(c) The inlet end of each culvert ~~shall~~ must be protected by a headwall of stable material as approved by the ~~chief~~ director

and the slope at the outlet end ~~shall~~ must be protected with an apron of rock riprap, energy dissipater, or other material approved by the ~~chief~~ director.

4.5.3.b.E.(d) Culverts ~~shall~~ must be covered by compacted fill to a minimum depth of one (1) foot or one-half (½) of the culvert inside diameter, whichever is greater.

4.5.3.b.E.(e) Alternative culvert designs may be submitted to the ~~chief~~ director for approval in cases where the design criteria in section 4.5.3.b.E of ~~these regulations~~ this rule is deemed to be impractical.

4.5.3.b.F. Culvert Openings.

Culvert openings installed on an access road ~~shall~~ must not be less than one hundred (100) square inches in area, but, in any event, all culvert openings ~~shall~~ must be of adequate capacity to carry the ~~storm runoff of a~~ peak discharge capacity of a 1-year, 24-hour storm ~~rainfall event~~ from the contributing watershed and ~~shall~~ must receive necessary maintenance to function properly at all times.

4.5.3.b.G. Intermittent or Perennial Stream Crossing.

Culverts, bridges, or other drainage structures ~~shall~~ must be used to cross intermittent or perennial streams. Consideration ~~shall~~ must be given to such factors as weather conditions, season of the year, and time period for construction with regard to using measures to minimize adverse effects to the water quality and stream channel. In no event ~~shall~~ may the sediment load of the stream be significantly increased or the water quality be significantly decreased during the construction period. Water control structures ~~shall~~ must be designed with a discharge capacity capable of passing the peak runoff of ~~for~~ a 10-year, 24-hour storm ~~rainfall event~~ from the contributing watersheds. If approved by the ~~chief~~ director, the capacity of the water control structure itself can be at least equal to or greater than the stream channel discharge capacity immediately upstream and downstream of the crossing provided the structure can pass at least a 1-year, 24-hour storm ~~rainfall event~~.

4.5.3.b.H. Sediment Control.

A sediment storage volume must be provided equal to 0.125 acre-feet for each acre of disturbed area ~~or a~~ and the storm water provisions of the Federal Clean Water Act, as reflected in 22-11 of the Code of W. Va. and any rules promulgated thereunder. A lesser value ~~as~~ may be approved by the ~~chief~~ director. Temporary erosion and sedimentation control measures ~~shall~~ must be implemented during construction until permanent sedimentation control can be established.

4.5.3.b.I. Revegetation ~~Seeding~~ of Slopes.

All disturbed area including fill and cut slopes, ~~shall~~ must be revegetated by the use of seed~~ed~~ and mulch~~ed~~ immediately, unless approved by the director, after the construction of an access road and that revegetation must be maintained thereafter as necessary to control or prevent erosion.

4.5.3.b.J. Surfacing.

An access road ~~shall~~ must not be surfaced with any acid-producing or toxic materials and the surface must be maintained in a manner that controls or prevents erosion and siltation.

4.5.3.c. Removal of Drainage Structures.

Bridges, culverts, and stream crossings necessary to provide access to the facility ~~shall~~ must not be removed until reclamation is completed and approved by the ~~chief~~ director. The same precautions as to water quality are to be taken during removal of drainage structures as those taken during construction and use.

4.5.3.d. Existing Access Roads.

Where existing roads are to be used for access or haulage, the requirements of sections 4.5.3.b.A through 4.5.3.b.E of ~~these regulations~~ this rule ~~shall~~ may be waived by the ~~chief~~ director if it can be demonstrated that reconstruction to meet the requirements of section 4.5.3 of ~~these regulations~~ this rule would result in greater environmental harm than is produced by existing conditions and that the drainage requirements in section 4.5.3.b of ~~these regulations~~ this rule can otherwise be met.

4.5.3.e. Infrequently Used Access Roads.

Access roads constructed for and used only to provide infrequent service to facilities such as monitoring devices may be exempted by the ~~chief~~ director from compliance with the requirements of sections 4.5.3.b.A, 4.5.3.b.H, and 4,5.3.b.I of ~~these regulations~~ this rule.

4.5.3.f. Dust Control.

All reasonable means ~~shall~~ must be employed to control dust from the surface of access roads, including those statutes, rules and regulations of the W. Va. Office of Air Quality.

4.5.3.g. Abandonment of Access Roads.

Access roads ~~shall~~ must be abandoned in accordance with the following:

4.5.3.g.A. Every effort ~~shall~~ must be made when an access road is abandoned to prevent erosion by the use of culverts, water bars, or other devices. Water bars or earth berms ~~shall~~ must be installed in accordance with the following spacings;

4.5.3.g.A.(a) For a grade of zero to five percent (0% to 5%), the spacing ~~shall~~ must be three hundred to eight hundred (300 to 800) feet;

4.5.3.g.A.(b) For a grade of five ~~six~~ to ten percent (5 ~~6%~~ to 10%), the spacing ~~shall~~ must be two hundred to three hundred (200 to 300) feet; and

4.5.3.g.A.(c) For a grade of ten ~~eleven~~ to fifteen percent (10 ~~11%~~ to 15%), the spacing ~~shall~~ must be one hundred to two hundred (100 to 200) feet.

4.5.3.g.B. The land covered by an access road ~~shall~~ must be revegetated by the use of seed~~ed~~ and mulch~~ed~~ immediately, unless approved by the director, after the abandonment of the road in accordance with section 4.5.6 of ~~these regulations~~ this rule.

4.5.4. Liners.

4.5.4.a. Liner System Requirements. A person who receives a permit for a landfill after ~~November 4, 1988~~ the effective date of this rule -- including a permit that results in an expansion of a currently permitted landfill -- ~~shall~~ must design, construct, operate, and maintain a liner system at that landfill. ~~"~~Nothing within ~~these regulations~~ this rule may ~~shall~~ be construed to allow the installations of any liner ~~or~~ system ~~(sic)~~ on areas not lined as of the effective date of this rule ~~November 30, 1989~~, that is not in conformance with section 4.5.4.a.C ~~B~~ or 4.5.4.a.E ~~G~~ of ~~these regulations~~ this rule. Landfills that do have an Article ~~5F~~ 15 permit and a liner installed as of that date ~~November 30, 1989,~~ may install a liner as approved by the ~~chief.~~ director~~"~~ ~~Nothing within section 4.5.4.a.E. or 4.5.4.a.G. of these regulations on areas not lined as of November 30, 1989. Areas where solid waste is or has been disposed of as of November 30, 1989 shall either be closed or retrofitted with a liner system~~ in accordance with the following:

~~**Editor's note: The amendment of section 4.5.4.a by Senate Bill 243 (passed March 10, 1990) produced two errors that may confuse the reader. First, the phrase "line or system" in the second sentence of this section is a typographical error that should read "liner system." Second, the second sentence of this section ("Nothing within these regulations...") was intended to supersede the fourth sentence ("Nothing within section 4.5.4..."), the repetition of the stated prohibition was unintentional.**~~

4.5.4.a.A. A landfill for which a valid closure permit has been issued pursuant to W. Va. Code §~~20-5F-5~~ 22-15-10 may remain in operation ~~until November 30, 1991 -- at which time such landfill shall be closed~~ after the date of this rule, provided that -- the facility is in conformance with its permit and ~~these regulations~~ this rule, and ~~by November 30, 1990,~~ such landfill has in place:

4.5.4.a.A.(a) Groundwater monitoring wells in conformance with the requirements of section 3.8.4 of ~~these regulations~~ this rule;

4.5.4.a.A.(b) A groundwater monitoring program in conformance with the requirements of section 4.11 of ~~these regulations~~ this rule;

4.5.4.a.A.(c) An effective leachate treatment capability; and

4.5.4.a.A.(d) Sediment run-off control.

4.5.4.a.B. All new SWLFs and lateral expansions ~~landfill~~ that meets all of the requirements enumerated in sections 4.5.4.a.A and 4.5.4.a.B of this rule, ~~these regulations and that has in place a liner underlying the facility that has been proven to the chief to be of adequate construction~~ may remain in operation ~~until November 30, 1992, at which time such landfill shall be closed in conformance with its permit and these regulations.~~ provided that:

the liner must meet the following criteria:

4.5.4.a.B.(a) The liner must be constructed, installed and maintained in accordance with a design approved by the director.

4.5.4.a.B.(b) The design must ensure that the concentration values listed in Appendix III to this rule will not be exceeded in the uppermost aquifer at the relevant point of compliance, as specified by the director under section 4.5.4.a.G. or;

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

~~4.5.4.a.C. A landfill that meets all of the requirements enumerated in sections 4.5.4.a.A and 4.5.4.a.B of these regulations, but for which a valid permit to operate has been issued rather than a closure permit, may remain in operation in such condition until November 30, 1992, after which date solid waste shall be placed in such facility only over a liner system designed, constructed, operated, and maintained in conformance with these regulations.~~

~~4.5.4.a.D. After November 30, 1992, all landfilled solid waste shall be placed above a liner system designed, constructed, operated, and maintained in conformance with these regulations.~~

4.5.4.a.C. ~~4.5.4.a.E.~~ A liner system ~~shall~~ must consist of the following elements:

4.5.4.a.C.(a) ~~4.5.4.a.E.(a)~~ Subbase, which is the prepared layer of soil or earthen materials upon which the remainder of the liner system is constructed;

4.5.4.a.C.(b) ~~4.5.4.a.E.(b)~~ Leachate detection zone, which consists of a perforated piping system within a layer of soil or earthen material placed on top of the subbase and upon which the composite liner is placed;

4.5.4.a.C.(c) ~~4.5.4.a.E.(c)~~ Composite liner, which consists of two (2) components; the compacted clay component topped with the synthetic liner; and

4.5.4.a.C.(d) ~~4.5.4.a.E.(d)~~ Leachate collection and protective cover zone which is a leachate collection system within a prepared layer of soil or earthen material placed over the composite liner.

4.5.4.a.D. ~~4.5.4.a.F~~ Active areas of existing landfills which have installed liners, leachate collection systems, and groundwater monitoring programs, as of the effective date of ~~these regulations~~ this rule, ~~which are in compliance with the former solid waste guidelines of the Department~~ may petition the director to allow use of an alternative ~~alternate~~ liner system, if:

4.5.4.a.D.(a) ~~4.5.4.a.F(a)~~ A demonstration is made to the

director that an alternative ~~alternate~~ design will provide the same degree of protection of the groundwater resources as the liner system described in section 4.5.4.a.E of ~~these regulations~~ this rule. The demonstration must include a series of groundwater monitoring well sampling analyses ~~as well as~~ and also the direction-of-migration and rate-of-flow studies showing that there are no existing or potential groundwater pollution problems; and

4.5.4.a.D.(b) ~~4.5.4.a.F(b)~~ A bond or other applicable means of financial assurance is posted in compliance with sections 3.7.10 and 3.13. ~~is posted in the amount of eight thousand dollars ($8,000) for each acre of the facility where the alternate liner is to be used.~~

4.5.4.a.E. ~~4.5.4.a.G~~ In order to allow for the development of new technology, applicants may petition the director to allow installation of an alternative ~~alternate~~ liner system upon a demonstration to the director that the alternative ~~alternate~~ system will be equally or more protective of the groundwater resources than the liner system described in section 4.5.4~~.a.E~~ of ~~these regulations~~ this rule.

4.5.4.a.F. Alternative Liner Design. Any permittee who wishes to utilize an alternative liner design must submit a design to the director that complies with section 4.5.4 of this rule, and must address the following factors:

4.5.4.a.F.(a) The hydrogeologic characteristics of the facility and surrounding land;

4.5.4.a.F.(b) The climatic factors of the area; and

4.5.4.a.F.(c) The volume and physical and chemical characteristics of the leachate.

4.5.4.a.G. Relative Point of Compliance.

4.5.4.a.G.(a) The relevant point of compliance specified by the director must be no more than 150 meters (492 feet) from the waste management unit boundary and must be located on land owned by the owner of the SWLF.

4.5.4.a.G.(b) In determining the relevant point of compliance, the director must consider at least the following factors:

4.5.4.a.G.(b)(A) The hydrogeologic characteristics of the facility and surrounding land;

4.5.4.a.G.(b)(B) The volume and physical and chemical characteristics of the leachate;

4.5.4.a.G.(b)(C) The quantity, quality, and direction, of flow of groundwater;

4.5.4.a.G.(b)(D) The proximity and withdrawal rate of the groundwater users;

4.5.4.a.G.(b)(E) The availability of alternative drinking water supplies;

4.5.4.a.G.(b)(F) The existing quality of the groundwater, including other sources of contamination and their cumulative impacts on the groundwater and whether groundwater is currently, or reasonably expected to be used, for drinking water;

4.5.4.a.G.(b)(G) Public health, safety, and welfare effects; and

4.5.4.a.G.(b)(H) Practicable capability of the permittee.

4.5.4.b. Liner System Limitations.

4.5.4.b.A. No person may construct a liner system for a facility unless there is at least four (4) feet maintained between the bottom of the subbase of the liner system and the seasonal high groundwater table.

4.5.4.b.A.(a) ~~Soil mottling shall indicate the presence of a~~ The location of The seasonal high groundwater table may be inferred by such indicators as soil mottling, soil gleying and iron and manganese concentrations.

4.5.4.b.A.(b) Drainage systems may be utilized to maintain a four (4) foot isolation distance between the bottom of the subbase of the liner system and the seasonal high groundwater table. The drainage system must be limited to drain tile, piping, and french drains.

4.5.4.b.B. No person may construct a liner system for a facility unless at least eight (8) feet can be maintained between the bottom of the subbase of the liner system and the permanent groundwater table.

4.5.4.b.C. A minimum of four (4) feet vertical separation ~~shall~~ must be maintained between the bottom of the subbase of the liner system and bedrock unless otherwise approved by the ~~chief~~ director. If backfilled material is used, the nature of these materials is subject to approval by the ~~chief~~ director.

4.5.4.b.D. If the approved design plans provide for the placement of additional adjacent liner, waste may not be placed within fifteen (15) feet of an edge of the liner that will be joined by an additional adjacent liner. The edge ~~shall~~ must be protected by soil cover or ~~an~~other method approved in the permit until additional liner is added.

4.5.4.b.E. If the approved design plans do not provide for the placement of additional adjacent liner, waste must ~~may~~ not be placed within five (5) feet of an edge of the liner.

4.5.4.b.F. A liner berm at least four (4) feet high ~~shall~~ must be constructed and maintained along the edge of the liner to prevent the lateral escape of leachate.

4.5.4.b.G. The edge of the liner ~~shall~~ must be clearly marked.

4.5.4.b.H. The operator ~~shall~~ must comply with additional requirements the ~~chief~~ director deems necessary to protect public health, safety, and the environment.

4.5.4.c. Liner System Subbase.

4.5.4.c.A. The subbase portion of a liner system ~~shall~~ must:

4.5.4.c.A.(a) Be at least six (6) inches thick and compacted to a Standard Proctor density of at least ninety-five percent (95%) at three to five percent (3% to 5%) wet of optimum;

4.5.4.c.A.(b) Have a minimum bearing capacity of two and one-quarter tons per square foot plus one-half of the total applied load in pounds per square foot;

4.5.4.c.A.(c) Be no more permeable than 1×10^{-6} cm/sec based on laboratory and field testing;

4.5.4.c.A.(d) Be hard, uniform, smooth, and free of debris, rock, plant materials, and other foreign material; and

4.5.4.c.A.(e) Have a slope of at least two percent (2%).

4.5.4.c.A.(f) The subbase ~~subgrade~~ construction certification and a Q.A./Q.C. report ~~shall~~ must be submitted to the ~~chief~~ director prior to the placement of any material over the subbase ~~subgrade~~.

4.5.4.d. Liner System Leachate Detection Zone.

4.5.4.d.A. The leachate detection zone ~~shall~~ must:

4.5.4.d.A.(a) Create a flow zone between the subbase and the composite liner more permeable than 1×10^{-3} cm/sec based on laboratory and field testing. The leachate detection zone including piping system must be designed and placed on a minimum slope of two percent (2%);

4.5.4.d.A.(b) Be at least twelve (12) inches thick;

4.5.4.d.A.(c) Be comprised of clean soil or earthen materials that contain no debris, plant material, or material with sharp edges;

4.5.4.d.A.(d) Have geotextile material placed within the leachate detection zone in such a manner as to prevent clogging of the piping system. The geotextile material must not be placed directly against pipes; and

4.5.4.d.A.(e) Contain a perforated piping system capable of detecting and intercepting liquid within the leachate detection zone and conveying the liquid to central collection points, as follows: ~~:~~

4.5.4.d.A.(e)(A) The slope, size, and spacing of the piping system ~~shall~~ must assure that liquids drain efficiently from the leachate detection zone;

4.5.4.d.A.(e)(B) The distance between pipes in the piping system must ~~may~~ not exceed one hundred (100) feet on center unless otherwise approved by the director;

4.5.4.d.A.(e)(C) The pipes ~~shall~~ must be installed nearly perpendicular to the slope with continuous positive slope;

4.5.4.d.A.(e)(D) The minimum diameter of the perforated pipe ~~shall~~ must be four (4) inches with a wall thickness of Schedule 40 or greater;

4.5.4.d.A.(e)(E) The pipe ~~shall~~ must be capable of supporting anticipated loads without failure based upon facility design;

4.5.4.d.A.(e)(F) Rounded stones or aggregates ~~shall~~ must be placed around all portions of the pipes of the piping system. The stones or aggregates ~~shall~~ must be sized to prevent clogging of the pipes and damage to the subbase ~~subgrade~~ and the composite liner;

4.5.4.d.A.(e)(G) The piping system ~~shall~~ must be installed in a fashion that facilitates cleanout, maintenance, and monitoring. Manholes or cleanout risers ~~shall~~ must be located along the perimeter of the leachate collection piping system. The number and spacing of the manholes or cleanout risers ~~shall~~ must be sufficient to ~~insure~~ ensure proper maintenance of the piping system by water jet flushing or an equivalent method;

4.5.4.d.A.(e)(H) The leachate detection system ~~shall~~ must be cleaned and maintained as necessary; and

4.5.4.d.A.(e)(I) The leachate detection zone construction certification and a Q.A./Q.C. report ~~shall~~ must be submitted to the ~~chief~~ director prior to the placement of the composite liner.

4.5.4.e. Liner System Composite Liner.

The composite liner must be comprised of the following components, unless otherwise approved in writing by the director:

4.5.4.e.A. The compacted clay component ~~shall~~ must:

4.5.4.e.A.(a) Be a minimum compacted thickness of two (2) feet;

4.5.4.e.A.(b) Be compacted in six (6) inch lifts;

4.5.4.e.A.(c) Be no more permeable than 1×10^{-7} cm/sec based on laboratory and field testing;

4.5.4.e.A.(d) Be free of particles greater than two (2) inches in any dimension, and must also be free of debris, rock, plant materials, and other foreign materials;

4.5.4.e.A.(e) Be placed without damaging the subbase ~~subgrade~~ and leachate detection zone;

4.5.4.e.A.(f) Be placed during a period of time when both the air temperature and the soil temperature are above freezing so that neither the compacted clay nor the subbase are frozen;

4.5.4.e.A.(g) Have a slope of at least two percent (2%) to facilitate the drainage of leachate across the liner surface; and

4.5.4.e.A.(h) Be designed, operated, and maintained so that the physical and chemical characteristics of the liner and liner's ability to restrict the flow of solid waste, solid waste constituents, or leachate is not adversely affected by the leachate.

4.5.4.e.A.(I) The director may approve the substitution of three (3) feet of compacted soil for the required two (2) feet of compacted clay if equivalency of groundwater protection can be proven.

4.5.4.e.B. The synthetic component ~~shall~~ must:

4.5.4.e.B.(a) Be no more permeable than 1×10^{-7} cm/sec ~~based on laboratory and field testing~~;

4.5.4.e.B.(b) Have a minimum thickness of sixty (60) mils;

4.5.4.e.B.(c) Be installed in accordance with manufacturer's specifications under the supervision of an authorized representative of the manufacturer;

4.5.4.e.B.(d) Be inspected for uniformity, damage, and imperfections during construction or installation;

4.5.4.e.B.(e) Have a slope of at least two percent (2%) to facilitate the drainage of leachate across the liner surface;

4.5.4.e.B.(f) Be designed to withstand the calculated tensile forces acting upon the synthetic materials when installed on slopes greater than twenty-five percent (25%);

4.5.4.e.B.(g) Have field seams oriented parallel to the line of the maximum slope and not across the slope. In corners and irregularly-shaped portions ~~locations~~, the number of field seams must ~~should~~ be minimized. No horizontal seam may ~~should~~ be less than five (5) feet from the toe of slope;

4.5.4.e.B.(h) Have the seam area free of moisture, dust, dirt, debris, and foreign material of any kind before seaming. Field seaming is prohibited, unless otherwise approved by the director when the ambient air temperature is below five degrees centigrade (5 degrees C), above forty degrees centigrade (40 degrees C), during precipitation or when winds are in excess of twenty (20) miles per hour;

4.5.4.e.B.(I) Be anchored a minimum of twenty-four (24) inches horizontally back from the edge of the top of the slope. The liner ~~shall~~ must be anchored by cutting a trench twelve (12) to sixteen (16) inches in depth, laying the liner across the soil perimeter ~~three (3) sides~~ of the trench,

backfilling the trench, and compacting the backfill material; and

4.5.4.e.B.(j) Be installed under the direction of a field crew foreman or other person approved in writing by the director with documented successful liner installation experience.

4.5.4.e.C. The certification of ~~on~~ the construction of the composite liner compacted clay component and a Q.A./Q.C. report ~~shall~~ must be submitted to the ~~chief~~ director prior to the placement of the composite liner synthetic component.

4.5.4.e.D. The composite liner synthetic component construction certification and the ~~a~~ Q.A./Q.C. report ~~shall~~ must be submitted to the ~~chief~~ director prior to the placement of the leachate collection and protective cover zone.

4.5.4.f. Liner System Leachate Collection and Protective Cover Zone.

4.5.4.f.A. The leachate collection and protective cover zone ~~shall~~ must:

4.5.4.f.A.(a) Create a flow zone between the composite liner and solid waste more permeable than 1×10^{-3} cm/sec based upon both laboratory and field testing. The leachate collection zone including the piping system must be designed and placed on a minimum slope of two percent (2%) to facilitate efficient leachate drainage and prevent ponding on the composite liner;

4.5.4.f.A.(b) Be at least eighteen (18) inches thick;

4.5.4.f.A.(c) Be constructed of soil or earthen materials to ensure that the hydraulic leachate head on the composite liner does not exceed one (1) foot at the expected flow capacity from the drainage area except during storm events;

4.5.4.f.A.(d) Be comprised of clean soil or earthen materials that contain no debris, plant materials, rocks, or other solid materials larger than one-quarter (1/4) inch in diameter and no material with sharp edges;

4.5.4.f.A.(e) Be graded, uniformly compacted, and smoothed;

4.5.4.f.A.(f) Be installed in a manner that prevents damage to the composite liner;

4.5.4.f.A.(g) Contain a perforated piping system capable of intercepting liquid within the leachate collection zone and conveying the liquid to control collection points. The piping system ~~shall~~ must also meet the following:

4.5.4.f.A.(g)(A) The slope, sizing and spacing of the piping system ~~shall assure~~ must ensure that liquids drain efficiently from the leachate collection zone;

4.5.4.f.A.(g)(B) The distance between pipes in the piping system must ~~may~~ not exceed one hundred (100) feet on center unless otherwise approved by the director;

4.5.4.f.A.(g)(C) The pipes ~~shall~~ must be installed nearly perpendicular to the slope with continuous positive slope;

4.5.4.f.A.(g)(D) The minimum diameter of the perforated pipe ~~shall~~ must be four (4) inches with a wall thickness of Schedule 40 or greater;

4.5.4.f.A.(g)(E) The pipe ~~shall~~ must be capable of supporting anticipated loads without failure based upon facility design;

4.5.4.f.A.(g)(F) Rounded stones or aggregates ~~shall~~ must be placed around all portions of the pipes of the piping system. The stones or aggregates ~~shall~~ must be sized to prevent clogging of the pipes and damage to the composite liner;

4.5.4.f.A.(g)(G) The piping system ~~shall~~ must be installed in a fashion that facilitates cleanout, maintenance, and monitoring. Manholes and ~~or~~ cleanout risers ~~shall~~ must be located along the perimeter of the leachate detection piping system. The number and spacing of the manholes and ~~or~~ cleanout risers ~~shall~~ must be sufficient to ~~insure~~ ensure proper maintenance of the piping system by water jet flushing or an equivalent method; ~~and~~

4.5.4.f.A.(g)(H) The leachate collection system ~~shall~~ must be cleaned and maintained as necessary; and

4.5.4.f.A.(g)(I) ~~4.5.4.f.A.(h)~~ Have geotextile material placed within the leachate collection system in such a manner as to prevent clogging of the piping system. The geotextile material must not be placed directly against pipes.

4.5.4.f.B. The leachate collection zone construction certification and the ~~a~~ Q.A./Q.C. report ~~shall~~ must be submitted to the ~~chief~~ director prior to the placement of solid waste.

4.5.4.g. Liner System Engineer Certification.

4.5.4.g.A. The liner system ~~shall~~ must be inspected during, and at the end of the construction by a registered professional engineer.

4.5.4.g.B. Upon completion of construction of each major element or stage of the liner system, including the subbase, leachate detection zone, composite liner, leachate collection zone~~,~~ and protective cover (and prior to the deposition of waste), the engineer ~~shall~~ must certify to the ~~chief~~ director under seal that the element or stage was constructed as approved in the permit.

4.5.4.h. Liner System Initial Placement of Solid Waste.

The first eight (8) feet of solid waste placed on the protective cover must

~~may~~ not contain material capable of penetrating or puncturing the protective cover.

4.5.5. Quality Assurance and Quality Control. The quality control measures and tests required by the Q.A./Q.C. plan under section 4.5.5 of ~~these regulations~~ this rule ~~shall~~ must be employed to ~~insure~~ ensure that the engineering design and performance standards are achieved.

4.5.5.a. The Q.A./Q.C. inspector ~~shall~~ will inspect those aspects of the subbase and subgrade preparation including, but not limited to, the following:

4.5.5.a.A. Subgrade Preparation

4.5.5.a.A.(a) ~~4.5.5.a.A.~~ Site preparation, including clearing, and grubbing;

4.5.5.a.A.(b) ~~4.5.5.a.B.~~ Excavation and contouring of the subgrade to required elevations;

4.5.5.a.B. Subbase Preparation

4.5.5.a.B.(a) ~~4.5.5.a.C.~~ Compaction of ~~subgrade~~ subbase to design density at proper moisture content to achieve required strength and stability to support the liner;

4.5.5.a.B.(b) ~~4.5.5.a.D.~~ Moisture content density and field strength tests performed as required;

4.5.5.a.B.(c) ~~4.5.5.a.E.~~ Compacted lift thickness;

4.5.5.a.B.(d) ~~4.5.5.a.F.~~ Compaction equipment~~,~~ weight, speed, and number of passes;

4.5.5.a.B.(e) ~~4.5.5.a.G.~~ Method of moisture addition;

4.5.5.a.B.(f) ~~4.5.5.a.H.~~ Proof rolling of subbase ~~subgrade~~; and

4.5.5.a.B.(g) ~~4.5.5.a.I.~~ Fine finishing of the subbase ~~subgrade~~ for acceptability of areas to be lined.

4.5.5.b. The Q.A./Q.C. inspector ~~shall~~ must inspect those aspects of the liner system including, but not limited to, the following:

4.5.5.b.A. Liner material to ~~insure~~ ensure that the materials being used meet~~s~~ specifications;

4.5.5.b.B. Liner material stockpiling, storage, and handling in a manner that ~~to~~ prevents damage;

4.5.5.b.C. Inspections of locations where inlet/outlet structures ~~or penetration~~ that penetrate ~~through~~ the liner to ~~insure~~ ensure the ~~protection of, and the~~ compatibility of those structures with respect to the

liner ~~system~~;

4.5.5.b.D. Final grades of the liner to ~~insure~~ ensure that they are within acceptable tolerance;

4.5.5.b.E. Final inspection of the liner for acceptability prior to placement of the protective cover material;

4.5.5.b.F. Installation of the compacted clay component of the liner with respect to the following:

4.5.5.b.F.(a) Compaction of the liner to design density at the proper moisture content to achieve the required hydraulic conductivity and the maintenance of the design strength and stability;

4.5.5.b.F.(b) Uniformity of compaction ~~effort~~;

4.5.5.b.F.(c) Compacted lift thickness;

4.5.5.b.F.(d) Compacted liner thickness;

4.5.5.b.F.(e) Compaction equipment weight, speed, and number of passes;

4.5.5.b.F.(f) Moisture content, density, hydraulic conductivity, and field infiltration tests to ensure that they are performed as required; and

4.5.5.b.F.(g) Repairs and corrective or remedial action performed as required;

4.5.5.b.G. Synthetic liner component with respect to the following:

4.5.5.b.G.(a) Liner panel placement is in accordance with required configuration;

4.5.5.b.G.(b) Permanent and temporary anchoring procedures are followed;

4.5.5.b.G.(c) Overlap and seam width are in accordance with the design;

4.5.5.b.G.(d) The area of seaming is clean and supported;

4.5.5.b.G.(e) The uniformity and continuity of seams and ~~or~~ welds;

4.5.5.b.G.(f) Cap strips are installed on all seams, as applicable;

4.5.5.b.G.(g) Qualitative and quantitative field seaming tests are performed as required for ~~on~~ imperfections in seams, wrinkles, and fishmouths and that all imperfections are repaired as required; and

4.5.5.b.G.(h) Corrective or remedial action taken;

4.5.5.b.H. The Q.A./Q.C. inspector ~~shall~~ must inspect those aspects of the leachate detection, and leachate collection~~,~~ and protective cover systems including, but not limited to, the following:

4.5.5.b.H.(a) Material stockpiling, storage, and handling to prevent damage;

4.5.5.b.H.(b) Drainage layer placement;

4.5.5.b.H.(c) Thickness of the leachate detection, ~~and~~ leachate collection and protective cover zones;

4.5.5.b.H.(d) Grain size analyses, relative density and ~~or~~ compaction tests are performed as required;

4.5.5.b.H.(e) Uniformity of the soil;

4.5.5.b.H.(f) Grades and alignments are within acceptable tolerance;

4.5.5.b.H.(g) Placement of stone or aggregate around all portions of the pipes in the piping systems;

4.5.5.b.H.(h) Proper implementation of actions to protect the piping system and the other components of the liner system from the loads and stresses due to the traffic of backfilling and other equipment; and

4.5.5.b.H.(I) Proper placement of the geotextile materials within ~~filter cloth layers on the top of~~ the leachate detection zone and within the leachate collection and protective cover zone.

4.5.5.b.I. Daily Q.A./Q.C. reports ~~shall~~ must be prepared by the Q.A./Q.C. inspectors and maintained in a bound log book which ~~shall~~ must be available at the job site at all times for inspection by the ~~chief or the~~ director. All lab reports and field testing results ~~shall~~ must be signed and dated by the inspector, and ~~shall~~ must be attached to the log book reports. Each daily ~~The~~ log book report ~~shall~~ must include, but not be limited to, the following:

4.5.5.b.I.(a) Identification of project name, location, and date;

4.5.5.b.I.(b) Weather conditions prevalent during construction and installation including:

4.5.5.b.I.(b)(A) Temperature (daily high and low);

4.5.5.b.I.(b)(B) Barometric pressure (high and low);

4.5.5.b.I.(b)(C) Wind direction and maximum speed;

4.5.5.b.I.(b)(D) Time of each ~~last~~ precipitation event; and

4.5.5.b.I.(b)(E) Total amount of each precipitation event;

4.5.5.b.I.(c) Description and location of construction currently underway;

4.5.5.b.I.(d) A listing of all equipment and personnel at work at each unit;

4.5.5.b.I.(e) Description and location of areas being tested or observed;

4.5.5.b.I.(f) Off-site material received and quality verification documentation;

4.5.5.b.I.(g) Calibration of test equipment;

4.5.5.b.I.(h) Description and location of remedial action taken; and

4.5.5.b.I.(I) Decisions and comments including conversations, directives, and directions for the following:

4.5.5.b.I.(I)(A) Acceptance or failure of inspections and ~~or~~ tests;

4.5.5.b.I.(I)(B) Acceptance or failure of daily work unit performance;

4.5.5.b.I.(I)(C) Problems encountered and corrective action taken;

4.5.5.b.I.(I)(D) On-going corrective action;

4.5.5.b.I.(I)(E) In-field modifications; and

4.5.5.b.I.(I)(F) Assessment of overall project quality.

4.5.6. Revegetation Plan.

4.5.6.a. Function of Annual and Biennial Cover Crops.

On areas where ~~excessive~~ erosion is likely to occur, rapid establishment of vegetative cover ~~shall be~~ is required. Immediate revegetation by the use of seeding and mulching with ~~of~~ approved annuals and biennials on such areas ~~shall~~ must be approved ~~considered~~ as a means for achieving temporary vegetative cover only.

4.5.6.b. Minimum Requirements of Soil Amendments.

4.5.6.b.A. A minimum of six hundred pounds per acre (600 lbs/acre) of 10-20-10 or 10-20-20 fertilizer, or equivalent, ~~shall~~ must be applied. Fertilizer rates based on soil analyses conducted by a qualified lab may be substituted for the minimum fertilizer rate.

4.5.6.b.B. Lime ~~shall be~~ is required where soil pH is less than 5.5. Lime rates ~~shall~~ must be such that a standard soil pH of 6.0 is ~~will be~~ achieved.

4.5.6.b.C. Mulch ~~shall~~ must be used on all disturbed areas. A list of approved materials and minimum application rates ~~to be applied~~ is available from the ~~chief~~ director.

4.5.6.c. Standards for Evaluating Vegetative Cover.

4.5.6.c.A. Final Revegetation Report.

The report ~~shall~~ must be submitted to the ~~chief~~ director within sixty (60) days after the final cover or cap has been completed and contain the actual acreage planted including the application rates of soil amendments, including fertilizer, lime, mulch, and seeding mixture.

4.5.6.c.B. Time for Inspection.

Prior to the spring and fall planting seasons, the operator ~~shall~~ must review all disturbed areas. Those areas that will not be disturbed again must be graded, limed, fertilized, mulched, and seeded. Those areas that have been previously seeded but are deficient of vegetative cover must be reseeded to establish a satisfactory stand of vegetation. Disturbed areas that may sit idle for more than sixty (60) days ~~shall~~ must be temporarily revegetated.

4.5.6.c.C. Standards for Perennials.

Standards for legumes and perennial grasses ~~shall~~ are required to achieve at least a ninety percent (90%) ground cover. Substandard areas ~~shall~~ must not exceed one-quarter acre in size, nor total more than ten percent (10%) of the revegetated ~~seeded~~ area.

4.5.7. Miscellaneous.

All facilities must be designed to meet the following requirements:

4.5.7.a. A method of controlling any dust or windblown debris must be included in the facility design. The factors which will be considered by the ~~chief~~ director when evaluating alternative provisions for controlling dust and windblown debris includes the remoteness of the facility, natural screening and windbreaks, and waste types;

4.5.7.b. Access to the facility must be restricted through the use of fencing, natural barriers, or other methods approved in writing by the director;

4.5.7.c. A minimum separation distance of one hundred (100) feet must be maintained between the limits of waste filling and all adjacent property lines. A minimum distance of fifty (50) feet must be maintained between any permanent berms or excavations associated with the facility (excluding surface water diversion structures) and ~~the~~ all adjacent property lines;

4.5.7.d. The facility must be designed so that final grades in each phase are reached as soon as possible and the open area used for refuse filling is minimized;

4.5.7.e. The grade of the final surface of the facility ~~shall~~ must not be less than three percent (3%) nor more than twenty-five percent (25%) unless otherwise approved by the ~~chief~~ director as a part of the issued permit. Long slopes ~~shall~~ must incorporate runoff control measures and terracing in order to minimize erosion. For sites having a natural slope greater than twenty-five percent (25%), a slope up to thirty-three percent (33%) may be considered acceptable if terracing is incorporated at least every twenty (20) feet of vertical distance with runoff control.

4.5.7.f. All facilities which may obstruct flight patterns to instrument approach airports must follow Federal Aviation Administration guidelines in designing intermediate and final grades;

4.5.7.g. A permittee storing waste ~~shall~~ must provide a sufficient number of containers to contain solid waste generated during periods between regularly scheduled collections;

4.5.7.h. An individual container or bulk container used for the storage of solid waste ~~shall~~ must have the following characteristics:

4.5.7.h.A. The container ~~shall~~ must be constructed to be easily handled for collection; and

4.5.7.h.B. The container ~~shall~~ must be corrosion resistant and compatible with waste to be stored;

4.5.7.i. An individual container or bulk container used for the storage of putrescible solid waste ~~shall~~ must also have the following characteristics:

4.5.7.i.A. The container ~~shall~~ must be equipped with a tight fitting lid or cover, or otherwise sealed; and

4.5.7.i.B. The container ~~shall~~ must be watertight, leak proof, insect proof, and rodent proof; and

4.5.7.j. A permittee that stores waste outside of containers ~~shall~~ must tie the wastes securely in bundles of a size that can be readily handled for collection, and in a manner that minimizes litter, safety hazards, and fire hazards.

4.6. General Operational Requirements.

4.6.1. General Requirements.

4.6.1.a. No person may operate or maintain a solid waste facility after the effective date of this rule, ~~June 10, 1989~~ that does not conform to an approved plan of operation and the following:

4.6.1.a.A. Daily deposition of solid waste must be confined to as

small an area as practical;

4.6.1.a.B. Provisions must be made to confine windblown material within the active disposal area;

4.6.1.a.C. At the conclusion of each day of operation, all windblown material must be collected and properly disposed of in the active disposal area in accordance with the provisions of section 4.6.1 of ~~these regulations~~ this rule, unless the operator establishes, to the satisfaction of the ~~chief~~ director, that:

4.6.1.a.C.(a) All windblown material cannot be collected using reasonable efforts because of conditions beyond the control of the operator;

4.6.1.a.C.(b) Windblown material which can be collected using a reasonable effort has been collected and disposed of properly;

4.6.1.a.D. Putrescible materials such as spoiled foods and animal carcasses must be immediately compacted and covered by the use of daily cover and other means;

4.6.1.a.E. Permittees of all SWLFs ~~Access to the facility must be restricted~~ must control public access and prevent unauthorized vehicular traffic through the use of artificial barriers, including fencing, natural barriers, both, or other methods approved in writing by the ~~chief~~ director, as appropriate to protect human health and the environment;

4.6.1.a.F. Procedures for Excluding the Receipt of Regulated Hazardous Waste.

4.6.1.a.F.(a) The application must contain an operator implemented program at the facility to detect and prevent attempts to dispose of hazardous wastes (regulated under Subtitle C of RCRA and defined in Part 161 of Chapter 40 of the CFR) and polychlorinated biphenyls (PCB) wastes at the facility (regulated under the Toxic Substances Control Act, and as defined in Part 761 of Chapter 40, or as reflected in Chapter 22, Article 18).

4.6.1.a.F.(b) Measures that solid waste facility operators must incorporate in their programs to exclude receipt of hazardous waste, include at a minimum~~,~~:

4.6.1.a.F.(b)(A) Random inspections of incoming loads, inspection of suspicious loads, recordkeeping of inspection results (including date, time, name of the hauling firm, driver, source of waste, vehicle identification numbers, and all observations made by the inspector), training of personnel to recognize hazardous waste, and procedures for notifying proper ~~department~~ division authorities if a regulated hazardous waste is found at the facility unless the permittee takes other steps approved by the director in writing to ensure that incoming loads do not contain regulated hazardous wastes or PCB wastes;

4.6.1.a.F.(b)(B) Records of any inspections. ~~All~~ activities and information ~~shall~~ must be reported on a form prescribed by the ~~chief~~ director~~,~~ and copies of these inspection records and all related information

must be retained in the SWLF's operating record.

4.6.1.a.F.(b)(C) Training of facility personnel to recognize regulated hazardous waste and PCB wastes; these records must be maintained in the SWLFs operating record; and

4.6.1.a.F.(c) Procedures for providing written notification to the director as required under Subtitle C of RCRA, or applicable rules and regulations promulgated under Chapter 22, Article 18, if a regulated hazardous waste or PCB waste is discovered at the facility.

4.6.1.a.G. Effective means must be taken to limit and control public access and prevent illegal dumping of wastes at ~~to~~ the active disposal area to minimize exposure of the public to hazards;

4.6.1.a.H. Effective means, including the use of daily cover, must be taken to prevent or control on-site populations of disease vectors, including flies, rodents, ~~and~~ other insects, ~~and~~ vermin and other organisms capable of directly or indirectly transmitting infectious diseases or pathogenic organisms from one person to another, or from an animal to a person, using techniques appropriate for the protection of human health and the environment.

4.6.1.a.I. Equipment must be provided, and daily cover material made available, to control accidental fires. Also, ~~and~~ arrangements must have been made previously with the local fire protection agency to utilize their ~~acquire its~~ services when needed;

4.6.1.a.J. An attendant must be on duty at the facility at all times while it is open for public use;

4.6.1.a.K. A gate must be provided at the entrance to the operation and it must be kept locked when an attendant is not on duty;

4.6.1.a.L. The gate area must be policed at the beginning of each day of operation to remove any solid waste which has been indiscriminately dumped during periods when the facility was closed;

4.6.1.a.M. A sign, acceptable to the ~~chief~~ director, must be posted at the entrance of any facility operated for public use which indicates the facility name, permit number, the hours that solid waste is received, the hours of operation, including hours for exempt disposal of solid waste, waste types accepted, penalties for unauthorized use, necessary safety precautions, and any other pertinent information. Such signs ~~shall~~ must be posted and maintained for the duration of the active life of the SWLF ~~permit~~, be clearly visible, readable, and uniform throughout the operation, be permanently fixed, and made of durable material;

4.6.1.a.N. The facility ~~shall~~ must be surrounded with rapidly growing trees, shrubbery, fencing, berms, or other appropriate means to screen it from the surrounding area and to provide a wind break;

4.6.1.a.O. Means acceptable to the ~~chief~~ director must be taken

to control dust resulting from facility operation;

4.6.1.a.P. ~~Scavenging within~~ Daily cover must be applied to the active disposal area to control the ~~is~~ prohibited act of scavenging;

4.6.1.a.Q. All burning is prohibited in accordance with statutes, rules and regulations of the West Virginia Office of Air Quality ~~Pollution Control Commission~~;

4.6.1.a.Q.(a) All open burning of solid waste, except for the infrequent burning of land clearing debris, diseased trees, or debris from emergency clean-up operations, except as approved by the Office of Air Quality is prohibited at all SWLFs.

4.6.1.a.R. Provisions must be made for backup equipment in the event of operating equipment breakdown;

4.6.1.a.S. All topsoil within the facility construction limits ~~shall~~ must is salvaged and stored within the property boundaries for use in facility closure. All stockpiled soil material which is not anticipated to be used within six (6) months must be seeded; and

4.6.1.a.T. All access roads to the active area of the operation ~~shall~~ must be maintained in good condition so as to prevent sedimentation of drainage ways.

4.6.2. Solid Waste Placement.

4.6.2.a. Solid Waste Placement and Compaction.

4.6.2.a.A. Working Faces.

Solid waste ~~shall~~ must be placed for disposal only at designated working faces. Working face width ~~shall~~ must be minimized and ~~shall~~ must not exceed one hundred (100) feet unless otherwise approved by the ~~chief~~ director. The slopes of working faces ~~shall~~ must not exceed thirty-three and one-third percent (33 1/3%). To prevent lateral migration of leachate through the final cover, all daily and intermediate cover from each lift of solid waste within twenty-five (25) feet of the final cover ~~shall~~ must be removed.

4.6.2.a.B. Daily Cell Height.

Daily cell height ~~shall~~ must not exceed eight (8) feet in the vertical dimension except in the middle area of the daily cell to divert stormwater. The vertical dimension of the middle area of the daily cell must not exceed eleven (11) feet.

4.6.2.a.C. Layering and Compaction.

Solid waste ~~shall~~ must be placed in layers not exceeding two (2) feet in depth and compacted with a minimum of three (3) passes with an 815 Caterpillar compactor or other equipment of equivalent compacting ability ~~weight~~, or as otherwise approved by the ~~chief~~ director.

4.6.2.b. Cover Material Application.

4.6.2.b.A. Daily Cover.

Except as provided in section 4.6.2.b.B, the permittee of all SWLFs must ~~shall be applied to~~ cover the entire exposed solid waste disposal area with a minimum thickness of six inches of compacted cover material at the ~~a minimum frequency of once~~ end of each ~~working~~ operating day, or at more frequent intervals if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging.

4.6.2.b.A.(a) Alternative materials of an alternative thickness (other than at least six inches of earthen material) may be approved by the director if the permittee demonstrates in writing that the alternative material and thickness does, or will control disease vectors, fires, odors, windblown material, and scavenging and does not present a threat to human health and the environment.

4.6.2.b.A.(b) The director may grant a temporary waiver from the requirement of sections 4.6.2.b.A and 4.6.2.b.A.(a) if the permittee demonstrates that there are extreme seasonal climatic conditions that make meeting such requirements impractical.

4.6.2.b.B. Intermediate Cover.

Solid waste fill surfaces which will remain exposed to weather for periods ~~of~~ in excess of thirty (30) days ~~shall~~ must have a minimum of twelve (12) inches of compacted cover material applied within thirty (30) days of completion of the fill surface.

4.6.2.b.C. Final Cover.

Solid waste fill surfaces which will receive no further solid waste deposits ~~shall~~ must place final cover in accordance with section 6.1.5.a.A of ~~these regulations~~ this rule.

4.6.2.b.D. Availability.

Cover material ~~shall~~ must be available from the facility site or other designated sources in sufficient quantities to provide:

4.6.2.b.D.(a) Six (6) inches of compacted daily ~~regular~~ cover material.

4.6.2.b.D.(b) Twelve (12) inches of compacted intermediate cover material.

4.6.2.b.D.(c) Sufficient cover material, as required in part 4.6.2.b and section 6 of this rule.

4.6.2.c. Waste Placement in Winter.

For the installation of all ~~landfills designed with~~ liners, a layer of waste at least four (4) feet thick, or an adequate amount of other frost protection

material, must be placed over the granular blanket in all portions of the lined area prior to December 31 of the same year ~~in which~~ of the liner was constructed ~~construction~~. Waste must ~~may~~ not be placed during the winter on any portion of the liner not having a four (4) foot thick layer of waste or other adequate frost protection material covering it after December 31 of each year. Those portions of the ~~clay~~ liner must be investigated for density and effects from freeze-thaw as specified by the ~~chief~~ director and must be repaired ~~recompacted~~ and recertified during the next construction season if required, prior to additional waste placement. These requirements may be waived by the ~~chief~~ director upon the request of the permittee.

4.7. Acceptable and Unacceptable Wastes.

4.7.1. Acceptable Wastes.

Landfills may receive the following types of solid wastes, as authorized by the facility's permit, or by written permission of the director that such waste is acceptable:

4.7.1.a. Agricultural waste;

4.7.1.b. Commercial waste;

4.7.1.c. Compost;

4.7.1.d. Construction waste;

4.7.1.e. Debris;

4.7.1.f. Demolition waste;

4.7.1.g. Discarded material;

4.7.1.h. Garbage;

4.7.1.i. Household waste;

4.7.1.j. Industrial waste;

4.7.1.k. Inert waste;

4.7.1.l. Municipal solid waste;

4.7.1.m. Non-municipal incinerator ash;

4.7.1.n. Putrescible waste;

4.7.1.o. Refuse;

4.7.1.p. Residential waste;

4.7.1.q. Rubbish;

4.7.1.r. Scrap metal;

4.7.1.s. Sludge;

4.7.1.t. Trash;

4.7.1.u. Bulky goods; ~~and~~

4.7.1.v. Other materials approved by the director~~.~~; and

4.7.1.w. Properly treated infectious wastes.

4.7.2. Unacceptable wastes.

Landfills may not receive the following wastes under any conditions, unless otherwise approved by the director:

4.7.2.a. Free liquids;

4.7.2.b. Regulated hazardous wastes;

4.7.2.c. Unstabilized sewage sludge or sludges that have not been dewatered, or contain less than 20% solids by weight;

4.7.2.d. Pesticide containers that have not been triple rinsed and crushed;

4.7.2.e. Drums that are not empty and not crushed, except as provided under section 4.13.5.a of ~~these regulations~~ this rule;

4.7.2.f. Waste which may be infectious waste, or is recognizable treated noninfectious medical waste, as defined in section 2~~.28~~ of ~~these regulations~~ this rule, must be labeled prior to being transported off-site. Treated medical waste that will pass through a screen with a one-half inch (½") grid is not considered recognizable. The label must be sized and attached in the manner required by Section 6.3.1 of Title 46, CSR Series 56 for infectious medical waste unless:

4.7.2.f.A. The waste was generated by a household or by an individual during self-care or self-treatment; or

4.7.2.f.B. The waste has not been compacted and is accompanied by a label, manifest, or shipping document which:

4.7.2.f.B.(a) ~~Shall identify~~ Identifies the generator of the waste by name, ~~and~~ address and business telephone number of the generator;

4.7.2.f.B.(b) ~~Shall identify~~ Identifies the name, ~~and~~ address and business telephone number of the generator of the facility at which the waste was rendered noninfectious;

4.7.2.f.B.(c) ~~Shall identify~~ Identifies the amount of waste rendered noninfectious by weight, volume, or number of containers, and the method of treatment;

4.7.2.f.B.(d) ~~Shall include~~ Includes a signed and dated

certification by the facility at which the waste was rendered noninfectious that states: "I hereby certify under penalty of law that this waste ~~is not infectious waste, as defined in Title 47, CSR Series 38 §10, or~~ has been rendered noninfectious in accordance with procedures required by Infectious Medical Waste, Title 46, CSR Series 56," ~~commonly accepted health standards~~; and

4.7.2.f.B.(e) ~~Shall be~~ Maintained on file at the municipal solid waste facility receiving that waste for final disposal, with the exception that labels permanently attached to the waste are not required to be maintained on file.

4.7.3. Wastes Acceptable under Certain Conditions.

4.7.3.a. The waste has been rendered noninfectious. Certifications establishing the wastes as noninfectious must be maintained for a period of three (3) years at the facility receiving the waste for disposal.

~~4.7.2.g.~~ **4.7.3.b.** Waste containing PCBs at concentrations of fifty parts per million (50 ppm) or greater;

~~4.7.2.h.~~ **4.7.3.c.** Municipal incinerator ash, except as provided under section 4.13.10 of ~~these regulations~~ this rule; or

~~4.7.2.i.~~ **4.7.3.d.** Petroleum-contaminated soils, except as provided under section 4.13.11 of ~~these regulations~~ this rule.

4.8. Leachate Management.

4.8.1. General Requirements.

4.8.1.a. Leachate must be removed from all collection tanks, manholes, lift stations, sumps, or other structures used for solid waste leachate storage as often as necessary to allow for gravity drainage of leachate from the facility at all times.

4.8.1.b. Any liquid which comes in contact with waste or accumulates in a portion of the facility where active waste disposal operations are occurring must be handled as leachate and properly treated as specified in section 4.8 of ~~these regulations~~ this rule unless otherwise approved by the ~~chief~~ director in writing.

4.8.1.c. All leachate collection and detection lines must be cleaned with a water jet cleanout device or equivalent immediately after construction, after the first layer of waste has been placed over an entire phase and annually thereafter.

4.8.1.d. Except as otherwise provided in sections 4.8.1.e through 4.8.1.f of ~~these regulations~~ this rule, leachate must be collected, treated, and then directly discharged into a POTW or other treatment facility permitted by the division ~~Department~~. In addition, the operator must operate a leachate treatment facility as provided in section 4.8.1.g of ~~these regulations~~ this rule within three (3) years following the detection of leachate in the collection or handling system, unless otherwise approved by the director. In

the case of an industrial solid waste landfill, the leachate collection and treatment facility must be in place and operable prior to the commencement of landfill operations.

4.8.1.e. Leachate may be collected, treated on-site, and then discharged into a receiving stream under a permit issued by the division ~~Department~~ under W. Va. Code ~~§20-5A~~ 22-11, and the rules and regulations promulgated thereunder, if the ~~chief~~ director approves this method in the solid waste facility permit issued under ~~these regulations~~ this rule. On-site treatment and discharge to a receiving stream will not be allowed unless direct discharge into a POTW or other permitted facility is not reasonably possible.

4.8.1.f. Except for industrial solid waste landfills, leachate may be collected, treated on-site, and then be applied to land via spray irrigation on a temporary basis if the ~~chief~~ director approves this method in the solid waste facility permit issued under ~~these regulations~~ this rule. On-site treatment and subsequent land application will not be allowed unless, at a minimum:

4.8.1.f.A. Discharge into a POTW or other permitted treatment facility is not possible;

4.8.1.f.B. Discharge of the treated leachate into a receiving stream in a manner consistent with W. Va. Code ~~§20-5A~~ 22-11, and the rules and regulations promulgated thereunder, is not attainable; and

4.8.1.f.C. Temporary spray irrigation is approved in the municipal solid waste facility permit issued under ~~these regulations~~ this rule.

4.8.1.g. Except for industrial solid waste landfills, for the first three (3) years following initial discharge of leachate into the collection and handling system, but not thereafter unless otherwise approved by the ~~chief~~ director, leachate may be handled by vehicular transportation to and leachate treatment at an off-site treatment facility. The continued use of vehicular transportation of leachate to an off-site treatment facility will not be allowed unless, at a minimum, one of the following applies:

4.8.1.g.A. If the director determines that a direct discharge into a POTW or other permitted treatment facility is not reasonably attainable; and ~~within three (3) years at a reasonable cost; or~~

4.8.1.g.B. If the director determines that a discharge of treated leachate into a receiving stream in a manner consistent with W. Va. Code ~~§20-5A~~ 22-11, and the ~~promulgated~~ rules ~~regulations~~ promulgated thereunder, is not attainable without potential degradation of the receiving stream within three (3) years.

4.8.1.h. If a permittee using vehicular transportation to and treatment at an off-site treatment facility loses the ability to dispose of leachate at that facility and is unable to secure an alternative off-site treatment facility acceptable to the ~~chief~~ director within fifteen (15) days from loss of its approved treatment facility, implementation of the treatment

plan required by section 4.8.1.f of ~~these regulations~~ this rule must begin immediately. This leachate treatment system must be completed and operational by the date on which off-site treatment becomes unavailable.

4.8.1.i. Except for industrial solid waste landfills, in conjunction with any of the treatment methods in section 4.8.1 of ~~these regulations~~ this rule, the temporary recirculation of leachate may be utilized if the following conditions exist:

4.8.1.i.A. The area subject to leachate recirculation previously has been filled with solid waste;

4.8.1.i.B. There is sufficient waste capacity to absorb the leachate;

4.8.1.i.C. The area subject to leachate recirculation is underlain by a leachate collection system; and

4.8.1.i.D. Leachate recirculation is conducted with a piping system approved by the ~~chief~~ director located under the intermediate cover and causes no odors, runoff, or ponding.

4.8.1.j. The permittee ~~shall~~ must immediately notify the ~~chief~~ director and describe remedial steps to be taken if:

4.8.1.j.A. Operation of the leachate treatment facility under ~~these regulations~~ this rule cannot prevent the facility from:

4.8.1.j.A.(a) Violating the terms of its permit, ~~these regulations~~ this rule, the Clean Water Act and the rules and regulations promulgated thereunder, or W. Va. Code §~~20-5A~~ 22-11 and the rules and regulations promulgated thereunder; or

4.8.1.j.A.(b) Causing surface water pollution or groundwater degradation, contamination, or pollution;

4.8.1.j.B. The facility is generating a quality or quantity of leachate that exceeds the design capacity of the treatment system;

4.8.1.j.C. For leachate treatment plans that include vehicular transportation of leachate to an off-site treatment plant, the total flow of leachate from the solid waste facility exceeds thirty thousand (30,000) gallons in a period of thirty (30) consecutive days;

4.8.1.j.D. The contractual agreement for leachate treatment by an off-site treatment system is breached or expired; or

4.8.1.j.E. The quality or quantity of solid waste being disposed at the facility changes from that set forth in the permit.

4.8.2. Leachate Treatment System, Design, and Construction.

4.8.2.a. Tanks, containers, and impoundments for storing leachate at a solid waste facility before or during treatment must be constructed and

lined in accordance with sections 4.8.2 and 4.8.3 of ~~these regulations~~ this rule.

4.8.2.b. A leachate treatment system must contain impoundments or tanks, for the storage of leachate prior to its treatment to effluent standards, that have a flow equalization and surge capacity equal to at least thirty (30) days of the leachate production estimated from the facility~~, to two hundred and fifty thousand (250,000) gallons whichever is greater~~.

4.8.2.c. Impoundments or tanks must be aerated as necessary to prevent and control odors.

4.8.2.d. The storage capacity of impoundments and tanks at a facility must be increased prior to each major phase of construction and as otherwise necessary.

4.8.2.e. Necessary collection and containment systems must be installed prior to the deposition of solid waste at the facility. A treatment or handling system approved by the ~~chief~~ director must be installed prior to the storage or disposal of solid waste.

4.8.2.f. Construction of the leachate treatment facility and associated works must be supervised by a registered professional engineer. At the completion of construction of the facility, or at the completion of a modification to the capacity or treatment technique at the facility, the operator must submit to the ~~chief~~ director a certification under the seal of a registered professional engineer that the work was completed in accordance with the plans and designs in the operator's permit.

4.8.2.g. A modification to a leachate treatment system must be completed within one (1) year after construction is initiated, unless the ~~chief~~ director specifies a shorter period of time in the permit modification.

4.8.3. Liquid Storage.

4.8.3.a. Aboveground and Onground Tank Requirements.

4.8.3.a.A. Tanks may be constructed of concrete, steel, or other material approved by the ~~chief~~ director. Tanks must be designed to prevent structural failure and be supported on a well-drained stable foundation which prevents movement, rolling, or settling of the tank.

4.8.3.a.A.(a) Bottoms of steel tanks that rest on earthen material must be cathodically protected with either sacrificial anodes or an impressed current system which is designed, fabricated, and installed in accordance with the approved engineering report.

4.8.3.a.A.(b) The exterior surfaces of all aboveground and onground steel storage tanks must be protected by a primer coat, a bond coat, and two (2) or more final coats of paint or have at least an equivalent surface coating system designed to prevent corrosion and deterioration.

4.8.3.a.A.(c) The interior of all aboveground and onground tanks must consist of a material or must be lined with a material compatible

to the liquid being stored.

4.8.3.a.B. All aboveground and onground tanks must have a secondary containment system which may consist of dikes, liners, pads, ponds, impoundments, curbs, ditches, sumps or other systems capable of containing the liquid stored.

4.8.3.a.B.(a) The design volume for the secondary containment system must be one hundred and ten percent (110%) of the volume of either the largest tank within the containment system or the total volume of all interconnected tanks, whichever is greater.

4.8.3.a.B.(b) The secondary containment system must be constructed of a material compatible with the liquid stored. The containment system must be constructed of either:

4.8.3.a.B.(b)(A) A minimum one (1) foot layer of compacted soil with a maximum permeability of 1×10^{-7} centimeters per second;

4.8.3.a.B.(b)(B) A concrete pad of a sufficient thickness to maintain integrity for the lifetime of the tank with a corrosion resistant coating; or

4.8.3.a.B.(b)(C) A geosynthetic liner of a minimum thickness equal to sixty (60) mils.

4.8.3.a.B.(c) A system must be designed to contain and remove storm water from the secondary containment area. Provisions must be included for the removal of any accumulated precipitation (rain, snow or ice) and be initiated within twenty-four (24) hours or when ten percent (10%) of the storage capacity is reached; whichever occurs first. Disposal must be in compliance with W. Va. Code §§~~20-5A, and 20-5F~~ 22-11, 22-15 and 22-12, and all applicable federal and state statutes, rules and regulations.

4.8.3.a.C. All aboveground and onground tanks must be equipped on the tank's discharge side with an overfill prevention system which may include, but not be limited to: level sensors and gauges, high level alarms or automatic shutoff controls. The overfill control equipment must be inspected weekly by the facility operator to ensure it is in good working order.

4.8.3.a.D. The exposed exterior of all aboveground and onground tanks must be inspected weekly by the facility operator for adequacy of the cathodic protection system, leaks, corrosion, and maintenance deficiencies. Interior inspection of tanks must be performed whenever the tank is drained. 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 liquid, remedial measures must be taken immediately to eliminate the leak or correct the deficiency. Inspection reports must be maintained and made available to the ~~chief~~ director upon request for the lifetime of the liquid storage system.

4.8.3.a.E. All uncovered tanks must have a minimum two (2) feet freeboard. Odor and vector control must be practiced when necessary.

4.8.3.b. Underground Tank Requirements.

4.8.3.b.A. Underground tank systems including tanks and piping must be placed a minimum of two (2) feet above the seasonally high groundwater table and a minimum of two (2) feet vertical separation must be maintained between bedrock and the lowest point of the tank. The tank system must be installed in accordance with manufacturer installation instructions.

4.8.3.b.B. Tank systems may be constructed of fiberglass reinforced plastic, steel that is cathodically protected and coated with a suitable dielectric material, steel that is clad with fiberglass, or any other materials approved by the ~~chief~~ director.

4.8.3.b.C. The secondary containment and a continuous leak detection system must 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.

4.8.3.b.C.(a) The interstitial space must 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.

4.8.3.b.C.(b) Any tank system vulnerable to corrosion must be protected from both corrosion of the primary tank interior and the external surface of the outer shell.

4.8.3.b.C.(b)(A) All resistant coatings applied to the primary tank interior must be chemically compatible with the liquid to be stored.

4.8.3.b.C.(b)(B) All cathodic protection systems must be tested within six (6) months of installation and at least every three (3) years thereafter unless otherwise specified by the ~~chief~~ director. A deficiency in the cathodic protection system must be corrected upon discovery.

4.8.3.b.D. All underground tanks must be equipped with an overfill prevention system which may include but not be limited to: level sensors and gauges, high level alarms, or automatic shutoff controls. The overfill control equipment must be inspected weekly by the facility operator to ensure it is in good working order.

4.8.3.b.E. Inspection and leak detection monitoring reports must be maintained and made available upon request for the lifetime of the liquid storage system.

4.8.3.c. Surface Impoundment Requirements.

4.8.3.c.A. Any surface impoundment must be constructed a minimum of five (5) feet above the seasonally high groundwater table. A minimum of four (4) feet vertical separation must be maintained between the base of the constructed liner and bedrock. Any surface impoundment that meets the definition of a "dam" found in ~~47 C.S.R. 32 §2.6~~ §22-14-3 of the Code of W. Va. must first obtain a certificate of approval for a dam before a solid waste facility permit can be approved under ~~these regulations~~ this rule.

4.8.3.c.B. Surface impoundments subject to ~~these regulations~~ this rule must be constructed with a liner system consisting of a minimum of two (2) liners and a leak detection system. Surface impoundments currently in use that do not have liners and a leak detection system as prescribed in section 4.8.3.c of ~~these regulations~~ this rule ~~shall~~ must either be closed or retrofitted to conform to ~~these regulations~~ this section within six (6) months following the effective date of this rule ~~by June 10, 1991~~. Liner construction must include the following:

4.8.3.c.B.(a) The top liner must be a synthetic liner with a minimum thickness equal to sixty (60) mils. A protective cover must ~~should~~ be placed over this liner to prevent damage during clean-out operations.

4.8.3.c.B.(b) A leak detection and removal system must be installed between the two (2) synthetic liners.

4.8.3.c.B.(c) The lower composite liner must consist of a minimum of two (2) feet of compacted clay with a maximum permeability of 1×10^{-7} centimeters per second overlain by a synthetic liner that is at least sixty (60) mils thick.

4.8.3.c.B.(d) Quality assurance and quality control testing must be performed by the project engineer in conformance with the requirements identified in section 4.5.5 of ~~these regulations~~ this rule.

4.8.3.c.C. A minimum of two (2) feet of freeboard must be maintained in all surface impoundments. Odor and vector control must be practiced when necessary.

4.8.3.c.D. A minimum of three (3) groundwater monitoring wells, one upgradient and two (2) downgradient of any surface impoundment may be required to be installed and sampled at the discretion of the ~~chief~~ director in accordance with ~~these regulations~~ this rule.

4.8.3.d. Closure of Liquid Storage Facilities.

4.8.3.d.A. The permittee or operator of the liquid storage facility must prepare a written closure plan for the liquid storage facility and submit the plan with the permit application for the solid waste management facility.

4.8.3.d.B. The permittee or operator must complete closure activities in accordance with the approved closure plan and within one hundred eighty (180) days after liquid collection has ceased.

4.8.3.d.C. At closure, all liquid and solid waste must be removed from the tank or surface impoundment, connecting lines, and any associated secondary containment systems. All solid waste removed must be properly handled and disposed of in conformance with the provisions of the Act and applicable federal and state requirements. All connecting lines must be disconnected and securely capped or plugged.

4.8.3.d.C.(a) Underground tanks must be removed or thoroughly cleaned to remove traces of waste and all accumulated sediments and then

filled to capacity with a solid inert material, such as clean sand or concrete slurry. If groundwater is found to be contaminated from the tank, the tank and surrounding contaminated soil must be removed and appropriately disposed. Other corrective actions to remediate the contaminant plume may be required by the ~~chief~~ director.

4.8.3.d.C.(b) Accessways to aboveground and onground tanks must be securely fastened in place to prevent unauthorized access. Tanks must either be stenciled with the date of permanent closure or removed. The secondary containment system must be perforated to provide for drainage.

4.8.3.d.C.(c) For surface impoundments, all waste residues, contaminated system components (e.g., liners) contaminated subsoils, structures, and equipment contaminated with waste must be removed and appropriately disposed. If the groundwater surrounding the impoundment is contaminated, other corrective actions to remediate a contaminant plume may be required by the ~~chief~~ director. If the groundwater surrounding the impoundment is found not to be contaminated, the liner system may remain in place if drained, cleaned to remove all traces of waste, and both liners punctured so that drainage is allowed. The impoundment must ~~is to~~ be backfilled and regraded to the surrounding topography.

4.8.4. Leachate Analysis.

The permittee ~~shall~~ must comply with the following sampling requirements at all monitoring points of the leachate collection and detection system as prescribed by the ~~chief~~ director:

4.8.4.a. On a daily basis, the flow rate and volume of flowing liquids from the leachate collection and detection systems ~~shall~~ must be determined; and

4.8.4.b. On a quarterly basis, the chemical composition of the leachate flowing into the leachate treatment system ~~shall~~ must be determined through the analysis of the leachate for the ~~following~~ parameters listed in Appendix I, or as specified by the facility permit, or order of the director. ~~: alkalinity, ammonia nitrogen, arsenic, barium, bicarbonate, biochemical oxygen demand (BOD 5 day), cadmium, calcium, chemical oxygen demand (COD), chlorides, chromium, cyanide, iron, lead, dissolved manganese, magnesium, mercury, nickel, nitrate, pH, potassium, selenium, silver, sodium, sulfate, total dissolved solids (TDS), total organic compounds (TOC), total phenolic materials, zinc, and any other parameter specified by the chief in writing~~ must be conducted.

~~**4.8.4.b.A.** The monitoring parameters listed in section 4.8.4.b of these regulations shall be reported as total metals unless otherwise specified by the chief.~~

4.9. Water Quality Standards. All permittees are required under the provisions of W. Va. Code ~~§20 5A~~ 22-11 and the rules promulgated thereunder ~~46 C.S.R. 1~~ to comply with all applicable water quality standards.

4.10. Landfill Gas Management. Decomposition gases generated within a landfill must be controlled to avoid hazards to health, safety, or property.

Measures to control decomposition gases must be undertaken in accordance with the following requirements:

4.10.1. Explosive Gases Control.

4.10.1.a. Effective means must be utilized by the permittee to prevent the migration of explosive gases generated ~~by the waste fill~~ in any facility structure, and to ensure that:

4.10.1.a.A. ~~At no time may~~ The concentration of methane or other explosive gases generated by the facility, including the waste fill, or ~~in~~ any facility structure (excluding the leachate collection system or gas control or recovery system components) or in the soils or air at or beyond the facility property boundary does not exceed 25 percent (25%) of the lower explosive limit for methane or other such explosive gases, in facility structures.

4.10.1.a.B. ~~The chief may require t~~ The concentration of methane and other explosive gases does not ~~to~~ exceed the lower explosive detection limit for ~~that~~ methane or other explosive gases at the facility property boundary.

4.10.2. Gas Monitoring Program.

Permittees of all SWLFs must implement an ongoing (routine) explosive gas monitoring program ~~must be initiated~~ to ensure that the standards of section 4.10.1 of ~~these regulations~~ this rule are met. The type and frequency of monitoring must be approved by the ~~chief~~ director and be based on the following factors:

4.10.2.a. Soil conditions;

4.10.2.b. Hydrogeologic conditions surrounding the facility, including the disposal area;

4.10.2.c. The hydraulic conditions surrounding the facility, including the disposal site; and

4.10.2.d. The location of the any manmade or other facility structures and property boundaries.

4.10.2.e The minimum frequency of monitoring must be quarterly.

4.10.3. Notification.

Upon detection of methane or other explosive gas levels exceeding the limits specified in section 4.10.1 of ~~these regulations~~ this rule, the landfill owner and the appropriate officials identified in the contingency plan must:

4.10.3.a. Immediately take all necessary steps to ensure the safety and protection of human health and ~~shall~~ must immediately notify the ~~chief~~ director, and

4.10.3.b. Within seven days of detection, place in the operating record the methane gas levels detected and a description of the steps taken to

protect human health; and

4.10.3.c. Within 60 days of detection, implement a remediation plan for the methane gas releases, place a copy of the plan in the operating record, and notify the director that the plan has been implemented.

4.10.3.d. The plan must describe the nature and extent of the problem and the proposed remedy.

4.10.3.e. The director may establish alternative schedules for demonstrating compliance with sections 4.10.3.b, 4.10.3.c, and 4.10.3.d.

4.11. Groundwater Monitoring and Corrective Action Program.

4.11.1. Groundwater Monitoring Program.

The groundwater sampling and analysis requirements for the groundwater monitoring system are as follows:

4.11.1.a. Groundwater Sampling and Analysis Requirements.

The groundwater monitoring program submitted by the permittee must ~~shall~~ include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of the groundwater quality at the background and downgradient wells installed in compliance with section 3.8.4.a after approval by the director. The permittee must retain a copy in the operating record. At a minimum, the program must include procedures and techniques for:

4.11.1.a.A. Sample collection;

4.11.1.a.B. Sample preservation and shipment;

4.11.1.a.C. Analytical procedures; ~~and~~

4.11.1.a.D. Chain of custody control; and

4.11.1.a.E. Quality assurance and quality control.

4.11.1.b. The groundwater monitoring program must include sampling and analytical methods that are appropriate for groundwater sampling and that accurately measures hazardous constituents and other monitoring parameters in groundwater samples. The sampling and analysis methods must ~~should~~ follow the approved quality assurance/quality control plan, and the ~~chief may~~ director will require resampling if he or she believes the samples were not properly sampled or analyzed.

4.11.1.b.A. Groundwater samples must not be field-filtered prior to laboratory analysis, except when monitoring for dissolved metals.

4.11.1.c. The permittee ~~shall~~ must determine groundwater flow rate and direction of groundwater in the uppermost significant aquifer at least annually.

4.11.1.c.A. The sampling procedures and frequency must be protective of human health and the environment.

4.11.1.d. The permittee ~~shall~~ must establish background groundwater quality for each of the monitoring parameters of constituents required in the particular groundwater monitoring program that applies to the facility, as determined by the Phase I, or Phase II~~, or Phase III~~ monitoring program. The minimum number of samples used to establish background groundwater quality must be consistent with the appropriate statistical procedures as specified in section 4.11.1.g of ~~these regulations~~ this rule.

4.11.1.e. Background quality at existing facilities may be based on sampling of wells that are not upgradient from the waste management area where:

4.11.1.e.A. Hydrogeologic conditions do not allow the permittee to determine what wells are upgradient; and

4.11.1.e.B. Sampling at other wells will provide an indication of background groundwater quality that is as representative or more representative than that provided by the upgradient wells.

4.11.1.e.C. Groundwater elevations must be measured in each well immediately prior to purging, each time groundwater is sampled.

4.11.1.e.D. The permittee must determine the rate and direction of groundwater flow each time groundwater is sampled.

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

4.11.1.e.F. The sampling procedures must be those specified under section 4.11.2.b for Phase I Detection Monitoring, sections 4.11.3.b and 4.11.3.d for Phase II Assessment Monitoring, and section 4.11.5.b for corrective action.

4.11.1.f. The permittee ~~shall~~ must determine whether there is a statistically significant increase over background values for each parameter or constituent required in the particular groundwater monitoring program that applies to the facility, as determined for Phase I and Phase II ~~and Phase III~~ monitoring programs. The permittee ~~shall~~ must make these statistical determinations each time he or she assesses groundwater quality.

4.11.1.f.A. In determining whether a statistically significant increase has occurred, the permittee ~~shall~~ must compare the groundwater quality at each monitoring well at the waste management boundary for each parameter or constituent to the background value for that parameter or constituent, according to the statistical procedures.

4.11.1.f.B. The permittee ~~shall~~ must determine whether there has been a statistically significant increase at each monitoring well at the facility boundary immediately after completion of sampling.

4.11.1.g. The permittee must employ one of the following statistical procedures in combination with the designated sampling requirement to determine a statistically significant increase. The permittee must specify in the operating record which one of the statistical methods was used in evaluating groundwater monitoring data for each hazardous constituent. The statistical test chosen must be conducted separately for each hazardous constituent in each well.

4.11.1.g.A. A parametric analysis of variance (ANOVA) followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The procedure or methods must include estimation and testing of the contrasts between each compliance (downgradient) well's mean and the background mean levels for each constituent.

4.11.1.g.B. An analysis of variance (ANOVA) based on ranks followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The procedure or method must include estimation and testing of the contrasts between each compliance (downgradient) well's mean and the background mean levels for each constituent.

4.11.1.g.C. A tolerance or prediction interval procedure in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit, or

4.11.1.g.D. A control chart approach that gives control limits for each constituent.

4.11.1.g.E. Another statistical test method that meets the performance standards of section 4.11.1.i.D may be utilized, provided that:

4.11.1.g.E.(a) The permittee must place a justification for this alternative in the operating record and notify the director of the use of this alternative test; and

4.11.1.g.E.(b) The justification must demonstrate that the alternative method meets the performance standards of section 4.11.1.i.

4.11.1.h. The ~~chief~~ director may establish an alternative sampling procedure and statistical test for any of the constituents listed in Appendix I or II of ~~these regulations~~ this rule, as required to protect human health and the environment. Factors to consider for establishing this alternative statistical procedure include:

4.11.1.h.A. If the distributions for different constituents differ, more than one procedure may be needed. The permittee must show that the normal distribution is not appropriate if using a nonparametric or other methodology not requiring an assumption of normality. For any statistic not based on a normal distribution, a goodness of fit test ~~shall~~ must be conducted to demonstrate that the normal distribution is not appropriate. Other tests ~~shall~~ must be conducted to demonstrate that the assumptions of the statistic or distribution are not grossly isolated;

4.11.1.h.B. Each parameter or constituent must ~~is to~~ be tested

for separately. Each time that a test is done, the test for individual constituents ~~shall~~ must be done at a type I error level no less than 0.01. A multiple comparison procedure may be used at a type I experiment-wide error rate no less than 0.05. The owner or operator must evaluate the ability of the method to detect contamination that is actually present and may be required to increase the sample size to achieve an acceptable error level;

4.11.1.h.C. The statistical procedure must ~~should~~ be appropriate for the behavior of the parameters or constituents involved. It must ~~should~~ include methods for handling data below the limit of detection. The permittee must ~~should~~ evaluate different ways of dealing with values below the limit of detection and choose the one that is most protective of human health and the environment. In cases where there are a high proportion of values below limits of detection, the permittee may demonstrate that an alternative procedure is more appropriate; and

4.11.1.h.D. The statistical procedure used must ~~should~~ account for seasonal and spatial variability and temporal correlation.

4.11.1.i. If contamination is detected by any of the statistical tests, and the ~~chief~~ director or permittee suspects that detection is an artifact caused by some feature of the data other than contamination, the ~~chief~~ director may specify that statistical tests of trend, seasonal variation, autocorrelation, or other interfering aspects of the data be done to establish whether the significant result is indicative of detection of contamination or resulted from natural variation.

4.11.1.i.A. The permittee ~~shall~~ must determine whether ~~or not~~ there is a statistically significant increase (or decrease, in the case of Phase I) over background values for each parameter or constituent required in the particular groundwater monitoring program that applies to the landfill, as determined under section 4.11.2.a or 4.11.3.a of this rule. The permittee must make these statistical determinations each time he or she assesses groundwater quality at the landfill.

4.11.1.i.B. In determining whether a statistically significant increase or decrease has occurred, the permittee ~~shall~~ must compare the groundwater quality of each parameter or constituent at each monitoring well designated pursuant to section 3.8.4.a.J to the background value of that parameter or constituent, according to the statistical procedures specified under section 4.11 of this rule ~~these regulations~~.

4.11.1.i.C. Within a reasonable time period after completing sampling and analysis as determined by the ~~Chief~~ director, the permittee ~~shall~~ must determine whether there has been a statistically significant increase over background at each monitoring well.

4.11.1.i.D. Any statistical method chosen under section 4.11.1.g must comply with the following performance standards, as appropriate:

4.11.1.i.D.(a) The statistical method used to evaluate groundwater monitoring data must be appropriate for the distribution of chemical parameters or hazardous constituents.

for separately. Each time that a test is done, the test for individual constituents ~~shall~~ must be done at a type I error level no less than 0.01. A multiple comparison procedure may be used at a type I experiment-wide error rate no less than 0.05. The owner or operator must evaluate the ability of the method to detect contamination that is actually present and may be required to increase the sample size to achieve an acceptable error level;

4.11.1.h.C. The statistical procedure must ~~should~~ be appropriate for the behavior of the parameters or constituents involved. It must ~~should~~ include methods for handling data below the limit of detection. The permittee must ~~should~~ evaluate different ways of dealing with values below the limit of detection and choose the one that is most protective of human health and the environment. In cases where there are a high proportion of values below limits of detection, the permittee may demonstrate that an alternative procedure is more appropriate; and

4.11.1.h.D. The statistical procedure used must ~~should~~ account for seasonal and spatial variability and temporal correlation.

4.11.1.i. If contamination is detected by any of the statistical tests, and the ~~chief~~ director or permittee suspects that detection is an artifact caused by some feature of the data other than contamination, the ~~chief~~ director may specify that statistical tests of trend, seasonal variation, autocorrelation, or other interfering aspects of the data be done to establish whether the significant result is indicative of detection of contamination or resulted from natural variation.

4.11.1.i.A. The permittee ~~shall~~ must determine whether ~~or not~~ there is a statistically significant increase (or decrease, in the case of Phase I) over background values for each parameter or constituent required in the particular groundwater monitoring program that applies to the landfill, as determined under section 4.11.2.a or 4.11.3.a of this rule. The permittee must make these statistical determinations each time he or she assesses groundwater quality at the landfill.

4.11.1.i.B. In determining whether a statistically significant increase or decrease has occurred, the permittee ~~shall~~ must compare the groundwater quality of each parameter or constituent at each monitoring well designated pursuant to section 3.8.4.a.J to the background value of that parameter or constituent, according to the statistical procedures specified under section 4.11 of this rule ~~these regulations~~.

4.11.1.i.C. Within a reasonable time period after completing sampling and analysis as determined by the ~~Chief~~ director, the permittee ~~shall~~ must determine whether there has been a statistically significant increase over background at each monitoring well.

4.11.1.i.D. Any statistical method chosen under section 4.11.1.g must comply with the following performance standards, as appropriate:

4.11.1.i.D.(a) The statistical method used to evaluate groundwater monitoring data must be appropriate for the distribution of chemical parameters or hazardous constituents.

4.11.1.i.D.(b) If the distribution of the chemical parameters or hazardous constituents is shown by the permittee to be inappropriate for a normal theory test, then the data should be transformed or a distribution-free theory test should be used.

4.11.1.i.D.(c) If the distributions for the constituents differ, more than one statistical method may be needed.

4.11.1.i.E. If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentrations or a groundwater protection standard, the test ~~shall~~ must be done at a Type I error level no less than 0.01 for each testing period.

4.11.1.i.E.(a) If a multiple comparisons procedure is used, the Type I experiment wise error rate for each testing period ~~shall~~ must be no less than 0.05; however, the Type I error of no less than 0.01 for individual well comparisons must be maintained.

4.11.1.i.E.(b) This performance standard does not apply to tolerance intervals, prediction intervals, or control charts.

4.11.1.i.F. If a control chart approach is used to evaluate groundwater monitoring data, the specific type of control chart and its associated parameter values must be protective of human health and the environment.

4.11.1.i.F.(a) The parameters must be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.

4.11.1.i.G. If a tolerance interval or a predictional interval is used to evaluate groundwater monitoring data, the levels of confidence and, for tolerance intervals, the percentage of the population that the interval must contain, and must be protective of human health and the environment.

4.11.1.i.G.(a) These parameters must be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.

4.11.1.i.H. The statistical method must account for data below the limit of detection with one or more statistical procedures that are protective of human health and the environment.

4.11.1.i.H.(a) Any practical quantitation limit (pql) that is used in the statistical method must be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility, as must a concentration level less than the mcl referenced in Appendix III to this rule.

4.11.1.i.I. If necessary, the statistical method ~~shall~~ must

include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.

4.11.1.i. Once established at a SWLF, groundwater monitoring ~~shall~~ must be conducted throughout the active life and post-closure care period of that SWLF as specified in section 6 of this rule.

4.11.1.k. The permittee may request the director to establish an alternative schedule(s) for demonstrating compliance with section 3.8.4. pertaining to notification of placement of certification in the operating record; section 4.11.2. pertaining to notification that statistically significant increase (SSI) notice is in the operating record; section 4.11.2 and 4.11.3.b. pertaining to an assessment monitoring program; section 4.11.3. pertaining to sampling and analyzing Appendix II constituents; section 4.11.3.d.B. pertaining to placement of notice (Appendix II constituents detected) in the operating record and notification of notice in the operating record; section 4.11.3.g. pertaining to sampling for Appendix I and II to this part; section 4.11.3.g. pertaining to notification (and placement of notice in operating record) of SSI above groundwater protection standard; sections 4.11.5 and 4.11.6. pertaining to assessment of corrective measures; section 4.11.7. pertaining to selection of remedy and notification of placement in the operating record; section 4.11.7. pertaining to notification of placement in the operating record (alternative corrective action measures); and section 4.11.7. pertaining to notification of placement in the operating record (certification of remedy completed).

4.11.2. Phase I Detection Monitoring Program.

4.11.2.a. Program Requirements. A Phase I Detection ~~m~~ Monitoring Program is required for all groundwater monitoring wells at all landfills and solid waste disposal surface impoundments except as otherwise provided in ~~these regulations~~ this rule and in section 4.11.3 ~~and 4.11.4 of these regulations~~ of this rule.

4.11.2.b. At a minimum, a Phase I detection monitoring program for commercial solid waste facilities shall include the ~~following~~ monitoring parameters listed in Appendix I, or as specified in the facility permit, or order of the director.~~: alkalinity, aluminum, ammonia nitrogen, arsenic, barium, bicarbonate, biochemical oxygen demand (BOD 5 day), boron, cadmium, calcium, chemical oxygen demand (COD), chlorides, chromium, copper, cyanide, iron, lead, dissolved manganese, magnesium, mercury, molybdenum, nickel, nitrate, pH, potassium, selenium, silver, sodium, sulfate, total dissolved solids (TDS), total organic carbon (TOC), total phenolic materials, vanadium, zinc, and any other parameter specified by the chief in writing.~~ For Class F solid waste facilities, the chief shall specify in the permit those parameters to be included in a Phase I monitoring program as appropriate for the types of waste to be disposed in a particular solid waste facility or which are reasonably expected to be present. Such proposed monitoring parameters shall be submitted to the chief as part of the permit application process. For coal combustion by-product facilities, the monitoring parameters shall consist of some combination of the following: pH, temperature, alkalinity, hardness, total dissolved solids, total suspended solids, specific conductance, total organic carbon, calcium, magnesium, sodium, iron, manganese, aluminum, chloride, sulfate, arsenic, copper, nickel, selenium, zinc, barium, mercury,

total and hexavalent chromium, lead, boron, molybdenum, cadmium, and vanadium.

~~4.11.2.b.A. The monitoring parameters listed in Section 4.11.2.b of these regulations shall be reported as total metals unless otherwise specified by the chief.~~

4.11.2.b.A. The director may delete any of the Appendix I monitoring parameters for a SWLF if it can be shown that the removed constituents are not reasonably expected to be contained in or derived from the waste contained in the SWLF.

4.11.2.b.B. The director may establish an alternative list of inorganic indicator parameters for a SWLF, in lieu of some or all of the heavy metals (constituents in Appendix I to this rule), if the alternative parameters provide a reliable indication of inorganic releases from the SWLF to the groundwater.

4.11.2.b.B.(a). In determining alternative parameters, the director may consider the following factors:

4.11.2.b.B.(a)(A) The types, quantities, and concentrations of constituents in waste managed at the SWLF;

4.11.2.b.B.(a)(B) The mobility, stability, and persistence of waste constituents or their reaction products in the unsaturated zone beneath the SWLF;

4.11.2.b.B.(a)(C) The detectability of indicator parameters, waste constituents, and reaction products in the groundwater; and

4.11.2.b.B.(a)(D) The concentration or values and coefficients of variation of monitoring parameters or constituents in the groundwater background.

4.11.2.c. Phase I Sampling and Analysis Procedures.

~~The permittee shall monitor quarterly.~~

4.11.2.c.A. The monitoring frequency for all constituents listed in Appendix I of this rule, or in the alternative list approved in accordance with section 4.11.2.b.B, must be at least semi-annually during the active life of the facility, including closure and the post-closure periods. The ~~chief~~ director may require more frequent monitoring on a site-specific basis by considering aquifer flow rate and resource value of the groundwater.

4.11.2.c.B. A minimum of four independent samples from each well (background and downgradient) must be collected and analyzed in accordance with section 4.11.2.b.B, during the first semi-annual sampling event.

4.11.2.c.C. At least one sample from each well (background and downgradient) must be collected and analyzed during subsequent semi-annual sampling events.

4.11.2.c.D. The director may specify an appropriate alternative frequency for repeated sampling and analysis for Appendix I constituents, or the alternative list approved in accordance with section 4.11.2.b.B, during the active life (including closure) and the post-closure care period.

4.11.2.c.E. The alternative frequency during the active life (including closure) must be no less than annual.

4.11.2.c.F. The alternative frequency must be based on consideration of the following factors:

4.11.2.c.F.(a) Lithology of the aquifer and unsaturated zone;

4.11.2.c.F.(b) Hydraulic conductivity of the aquifer and unsaturated zone;

4.11.2.c.F.(c) Groundwater flow rates;

4.11.2.c.F.(d) Minimum distance between upgradient edge of the SWLF and downgradient monitoring well screen (minimum distance of travel); and

4.11.2.c.F.(e) Resource value of the aquifer.

4.11.2.d. Unless otherwise directed by the director, if the permittee determines, pursuant to this rule, that there is a statistically significant increase over background for one or more ~~any~~ of the constituents listed in Appendix I to this rule, or in the alternative list approved in accordance with section 4.11.2.b.B, Phase I parameter at the boundary specified under sections 3.8.4.a.J, the ~~he~~ permittee must:

4.11.2.d.A. ~~Notify the chief within fourteen (14) days of this finding. The notification must indicate which Phase I monitoring parameters have shown statistically significant increases over background levels;~~ Within 14 days of this finding, place a notice in the operating record indicating which constituents have shown statistically significant changes from background levels, and notify the director that this notice was placed in the operating record;

4.11.2.d.B. Within a thirty-day period, repeat the sampling of the groundwater in all appropriate monitoring wells as approved by the director, and determine the concentration of all constituents designated under section 4.11.2.b of this rule ~~these regulations~~ that are present in the groundwater; and

4.11.2.d.C. If the repeat sampling indicates that no statistically significant increase over background levels has occurred, continue monitoring at the Phase I level; or

4.11.2.d.D. If the repeat sampling confirms that a statistically significant increase over background levels has occurred, establish a Phase II assessment monitoring program meeting the requirements of section 4.11.3 of these regulations within ninety 90 ~~thirty (30)~~ days of confirmation, except as provided for in section 4.11.2.e.

4.11.2.e. Other Source Determination.

4.11.2.e.A. The permittee may demonstrate that a source other than a SWLF caused the contamination or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. A report documenting this demonstration must be certified by a qualified groundwater scientist approved by the director and be placed in the operating record.

4.11.2.e.B. If the director agrees that a successful demonstration has been made and documented, the permittee may continue Phase I Detection Monitoring as specified in this section.

4.11.2.e.C. If, after 90 days, a successful demonstration has not been made, the permittee must initiate a Phase II Assessment Monitoring Program as required in section 4.11.3.

4.11.3. Phase II Assessment Monitoring Program.

4.11.3.a. A Phase II assessment monitoring program is required whenever statistically significant increases over background have been detected between background and downgradient monitoring wells for one ~~two (2)~~ or more ~~of the Phase I monitoring parameters~~ constituent listed in Appendix I or in the alternative list approved by the director in accordance with section 4.11.2.b.B.

4.11.3.b. Phase II Sampling and Analysis Procedures.

A Phase II monitoring program must include quarterly monitoring of all constituents identified in Appendix II of ~~these regulations~~ this rule in addition to specified Phase I parameters, or in the case of Class F solid waste facilities, those specified by the director ~~chief~~ unless waived by the director ~~chief~~ upon request of the permittee.

4.11.3.b.A. Within 90 days of triggering an assessment monitoring program, and annually thereafter, the permittee must sample and analyze the groundwater for all constituents identified in Appendix II of this rule.

4.11.3.b.B. A minimum of one sample from each downgradient well must be collected and analyzed during each sampling event.

4.11.3.b.C. For any constituent detected in the downgradient wells as the result of the complete Appendix II analysis, a minimum of four independent samples from each well (background and downgradient) must be collected and analyzed to establish background for new constituents.

4.11.3.b.D. The director may specify an appropriate subset of wells to be sampled and analyzed for Phase II constituents during assessment monitoring.

4.11.3.b.E. The director may delete any of the Phase II Monitoring Parameters for a SWLF if it can be shown that the removed constituents are not reasonably expected to be in or derived from the waste contained in the SWLF.

4.11.3.b.F. ~~4.11.2.b.A.~~ For those Phase II constituents that are determined to be below the detectable limits of the standard analytical methods, the ~~chief~~ director may reduce the required monitoring frequency. In no case may the monitoring frequency be less than once per year.

4.11.3.b.G. ~~4.11.3.b.B.~~ If the permittee finds no Phase II constituent in groundwater during the initial sampling made pursuant to a Phase II assessment monitoring program, the permittee ~~he~~ may petition the ~~chief~~ director for a reinstatement of the Phase I monitoring program. Within ninety (90) days of the receipt of such a petition, the director may ~~chief shall~~ either approve or deny the petition and notify the permittee of the ~~his~~ decision in writing.

~~4.11.3.c. If the permittee determines that there is a statistically significant increase of any Phase II monitoring parameter specified in section 4.11.3.b. of these regulations at any monitoring well at the facility boundary, he must:~~

4.11.3.c. The director may specify an appropriate alternative frequency for repeated sampling and analysis for the full set of Appendix II constituents required by section 4.11.3.b of this rule, during the active life (including closure) and post-closure care of the SWLF considering the following factors:

~~4.11.3.c.A. Notify the chief of this finding in writing within fourteen (14) days. The notification must indicate which parameters have shown statistically significant increases over background levels;~~

4.11.3.c.A. Lithology of the aquifer and unsaturated zone;

~~4.11.3.c.B. Within a thirty day period, sample the groundwater in all monitoring wells and determine the concentration of all constituents identified in Appendix C of these regulations that are present in the groundwater; and~~

4.11.3.c.B. Hydraulic conductivity of the aquifer and unsaturated zone;

~~4.11.3.c.C. By using ambient values in upgradient wells, establish a background value for each Appendix C constituent that has been found.~~

4.11.3.c.C. Groundwater flow rates;

4.11.3.c.D. Minimum distance between upgradient edge of the SWLF and downgradient monitoring well screen (minimum distance of travel);

4.11.3.c.E. Resource value of the aquifer; and

4.11.3.c.F. Nature (fate and transport) of any constituents detected in response to this section.

4.11.3.d. After obtaining the results from the initial or subsequent sampling events required in section 4.11.3.b, the permittee must, within 14

days, place a notice in the operating record identifying the Phase II constituents that have been detected and notify the director that this notice has been placed in the operating record;

~~4.11.3.d. Within ninety (90) days, submit to the chief an evaluation of the concentration of all Appendix C constituents found in the groundwater at each monitoring well.~~

4.11.3.d.B. Required Permittee Resampling Procedures for Phase II Events.

4.11.3.d.B.(a) Within 90 days, and on at least a semiannual basis thereafter, resample all wells specified by section 3.8.4, the permittee must conduct analyses for all constituents in Appendix I to this rule or in the alternative list approved in accordance with section 4.11.2 and for those constituents in Appendix II to this rule that are detected in response to section 4.11.2.c, and record their concentrations in the facility operating record.

4.11.3.d.B.(b) At least one sample of each well (background and downgradient) must be collected and analyzed during these sampling events.

4.11.3.d.B.(c) The director may specify an alternative monitoring frequency during the active life (including closure) and post-closure period for the constituents referred to in this section.

4.11.3.d.B.(d) The alternative frequency for Appendix I constituents, or the alternative list approved in accordance with section 4.11.2.b.B, during the active life (including closure) must be no less than annual.

4.11.3.d.B.(e) The alternative frequency must be based on consideration of the factors specified in section 4.11.3.c;

4.11.3.d.C. Establish background concentrations for any constituents detected pursuant to section 4.11.3.b or 4.11.3.d; and

4.11.3.d.D. Groundwater Protection Standards.

4.11.3.d.D.(a) Establish groundwater protection standards for all constituents detected pursuant to section 4.11.3.b or 4.11.3.d.

4.11.3.d.D.(b) The groundwater protection standards must be established in accordance with section 4.11.3.h or 4.11.3.i.

~~4.11.3.e. Within one hundred and eighty (180) days submit to the chief:~~

~~4.11.3.e.A. An engineering feasibility plan for a corrective action program necessary to meet the requirements for corrective action under Section 4.11.5 or 4.11.6 of these regulations; and~~

~~4.11.3.e.B. Implement a Phase III monitoring program.~~

4.11.3.e. If the concentrations of all Appendix II constituents are shown to be at or below background values, using the statistical procedures in sections 4.11.1.g and 4.11.1.h of this rule, for two consecutive sampling events, the permittee must notify the director of this finding and may return to Phase I detection monitoring.

~~4.11.3.f. If the permittee determines that there is a statistically significant increase of parameters or constituents specified at any monitoring well, he may demonstrate that a source other than the landfill unit caused the increase or that there is an error in sampling, analysis, or evaluation. In making this demonstration, the permittee must:~~

~~4.11.3.f.A. Notify the chief in writing within fourteen (14) days of determining a statistically significant increase that he intends to make such a demonstration;~~

~~4.11.3.f.B. Within ninety (90) days, or such additional time period as approved by the chief, submit a report to the chief which demonstrates that a source other than the facility caused the increase or that the increase resulted from error in sampling, analysis, or evaluation; and~~

~~4.11.3.f.C.~~ Continue to monitor in accordance with the Phase III monitoring program.

4.11.3.f. If the concentrations of any Appendix II constituents are above background values, but all concentrations are below the groundwater protection standard established under section 4.11.3.h, or 4.11.3.i, using the statistical procedures in sections 4.11.1.g and 4.11.1.h of this rule, the permittee must continue assessment monitoring in accordance with this section.

4.11.3.g. Statistically Significant Level Above Groundwater Protection Standards.

4.11.3.g.A. If one or more Appendix II constituents are detected at statistically significant levels above groundwater protection standard established under section 4.11.3.h, or 4.11.3.i, in any sampling event, the permittee must, within 14 days of this finding, place a notice in the operating record identifying the Appendix II constituents that have exceeded the groundwater protection standard and notify the director and all appropriate local government officials that the notice has been placed in the operating record. The permittee must also:

4.11.3.g.A.(a) Characterize the nature and extent of the release by installing additional monitoring wells as necessary;

4.11.3.g.A.(b) Install at least one additional monitoring well at the facility boundary in the direction of contaminant migration and sample this well in accordance with section 4.11.3.d.B;

4.11.3.g.A.(c) Notify all persons who own the land or reside on the land that directly overlies any part of the plume of contamination if contaminants have migrated off-site if indicated by sampling of wells in accordance with section 4.11.3.g; and

4.11.3.g.A.(d) Initiate an assessment of corrective measures as required by section 4.11.5 of this rule within 90 days; or

4.11.3.g.B. Other Source of Statistically Significant Increase (SSI) Determination.

4.11.3.g.B.(a) The permittee may demonstrate that a source other than a SWLF caused the contamination, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

4.11.3.g.B.(b) A report documenting this demonstration must be certified by a qualified groundwater scientist and approved by the director of an approved state and placed in the operating record.

4.11.3.g.B.(c) If the director agrees that a successful demonstration has been made the permittee must continue monitoring in accordance with the assessment (phase II) monitoring program pursuant to section 4.11.3, and may return to Phase I detection monitoring if the Phase II constituents upon resampling are at or below background as specified in section 4.11.3.e.

4.11.3.g.B.(d) Until the director agrees that a successful demonstration has been made, the permittee must continue to comply with section 4.11.3.g including initiating an assessment of corrective measures.

4.11.3.h. Establishment of Groundwater Protection Standards.

4.11.3.h.A. The permittee must establish a groundwater protection standard for each Appendix II constituent detected in the groundwater.

4.11.3.h.B. The groundwater protection standard must be as follows:

4.11.3.h.B.(a) For constituents for which a maximum contaminant level (MCL) has been promulgated under section 1412 of the Safe Drinking Water Act (codified) under 40 CFR Part 141, or 46 CSR 12, the MCL for that constituent;

4.11.3.h.B.(b) For constituents for which MCLs have not been promulgated, the background concentration for the constituent established from wells in accordance with section 3.8.4; or

4.11.3.h.B.(c) For constituents for which the background level is higher than the MCL identified under section 4.11.3.h, or health-based levels, identified under section 4.11.3.i, the background concentration.

4.11.3.i. Alternative Groundwater Protection Standards.

4.11.3.i.A. The director may establish an alternative groundwater protection standard for constituents for which MCLs have not been established.

4.11.3.i.B. These groundwater protection standards must be appropriate health-based levels that satisfy the following criteria:

4.11.3.i.C. The level is derived in a manner consistent with EPA guidelines for assessing the health risks of environmental pollutants (51 CFR 33992, 34006, 34014, 34028, September 24, 1986);

4.11.3.i.D. The level is based on scientifically valid studies conducted in accordance with the Toxic Substances Control Act, Good Laboratory Practice Standards (40 CFR Part 792) or equivalent;

4.11.3.i.E. For carcinogens, the level represents a concentration associated with an excess lifetime cancer risk level (due to continuous lifetime exposure) with the 1×10^{-4} to 1×10^{-6} range; and

4.11.3.i.F. Systemic Toxicants.

4.11.3.i.F.(a) For systemic toxicants, the level represents a concentration to which the human population (including sensitive subgroups) could be exposed to on a daily basis that is likely to be without appreciable risk of deleterious effects during a lifetime.

4.11.3.i.F.(b) For purposes of this section, systemic toxicants include toxic chemicals that cause effects other than cancer or mutation.

4.11.3.j. In establishing groundwater protection standards under section 4.11.3.i., the director may consider the following:

4.11.3.j.A. Multiple contaminants in the groundwater;

4.11.3.j.B. Exposure threats to sensitive environmental receptors; and

4.11.3.j.C. Other site-specific exposure or potential exposure to groundwater.

4.11.4. (Reserved)

~~**4.11.4. Phase III Monitoring Program.**~~

~~4.11.4.a. Phase III monitoring is required whenever any Appendix B monitoring parameter shows a statistically significant increase over background.~~

~~4.11.4.b. The compliance period for Phase III monitoring programs is equal to the active life of the facility plus the required closure period unless the permittee can demonstrate that every Phase III constituent present in groundwater monitoring samples is at the concentration approved by the chief and can further demonstrate that the designated level has not been exceeded for a period of three (3) consecutive years. Upon completion of these demonstrations, the permittee may petition the chief for a reinstatement of the Phase II monitoring program. Within ninety (90) days of the receipt of such a petition, the chief shall either approve or deny the petition and notify the permittee of his decision in writing.~~

~~4.11.4.c. If the permittee is engaged in a corrective action program~~

~~at the end of the minimum compliance period specified in section 4.11.4.b of these regulations, the compliance period is extended until the owner or operator can demonstrate that the designated groundwater concentration levels have not been exceeded for a period of three (3) consecutive years.~~

~~4.11.4.d. Phase III monitoring parameters and constituents must include:~~

~~4.11.4.d.A. All Phase I monitoring parameters;~~

~~4.11.4.d.B. All Appendix B parameters detected at levels above background; and~~

~~4.11.4.d.C. All Appendix C constituents that are determined to be present at levels above background concentrations.~~

~~4.11.4.e. The chief shall determine an appropriate monitoring frequency on a site specific basis by considering aquifer flow rate. The following minimum frequencies apply:~~

~~4.11.4.e.A. Quarterly for those constituents identified in section 4.11.4.d of these regulations that exceed background concentrations; and~~

~~4.11.4.e.B. Annually for all Appendix C constituents.~~

~~4.11.4.f. If the permittee determines that there is a statistically significant increase over background for any Appendix C constituent at any monitoring well, he shall:~~

~~4.11.4.f.A. Notify the chief of this finding in writing within fourteen (14) days. The notification shall indicate which parameters or constituents have shown statistically significant increases over background levels;~~

~~4.11.4.f.B. Within a thirty (30) day time period, repeat the sampling of the groundwater in all monitoring wells and determine the concentrations of all constituents required in section 4.11.4.d. of these regulations; and~~

~~4.11.4.f.C. If the repeat sampling indicates that no statistically significant increase over background levels has occurred, return to monitoring at the Phase II level; or~~

~~4.11.4.f.D. If the repeat sampling confirms that a statistically significant increase over background levels has occurred.~~

~~4.11.4.f.D.(a) Within ninety (90) days of confirmation submit to the chief the following information:~~

~~4.11.4.f.D.(a)(A) An evaluation of the concentration of any Phase III constituent found in groundwater at each monitoring well;~~

~~4.11.4.f.D.(a)(B) Any proposed changes to the groundwater~~

~~monitoring system necessary to meet the requirements of a corrective action program; and~~

~~4.11.4.f.D.(a)(C) Any proposed changes to the monitoring frequency, sampling and analysis procedures or methods, or statistical procedures used at the facility necessary to meet the requirements of the corrective action program; and~~

~~4.11.4.f.D.(b) Within one hundred and eighty (180) days, submit to the chief an engineering feasibility plan for any corrective action program necessary to meet the requirements specified in section 4.11.5 or 4.11.6 of these regulations.~~

~~4.11.4.g. If the permittee determines, pursuant to section 4.11.4.f of these regulations, that there is a statistically significant increase of any Phase III monitoring parameter at any monitoring well, he may demonstrate that a source other than the facility caused the increases or that the increases resulted from sampling, analysis, or evaluation. In making this demonstration, the permittee must:~~

~~4.11.4.g.A. Notify the chief in writing within seven (7) days of determining a statistically significant increase that he intends to make such a demonstration;~~

~~4.11.4.g.B. Within ninety (90) days, submit a report to the chief which demonstrates that a source other than the facility caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation; and~~

~~4.11.4.g.C. Continue to monitor in accordance with the Phase III monitoring program.~~

4.11.5. Assessment of Corrective Measures.

Whenever a statistically significant increase is found in a Phase II ~~or Phase III~~ monitoring parameter, or when groundwater contamination is otherwise identified by the ~~chief~~ director at sites without monitoring programs, which is determined by the ~~chief~~ director to have resulted in a significant adverse effect on an aquifer, and which is attributable to a solid waste facility, the ~~chief~~ director may require appropriate corrective or remedial action pursuant to ~~West Virginia~~ Code Chapter ~~20~~ 22, Articles ~~5A~~ 11 and 12, and Chapter ~~20~~ 22, Article ~~5F~~ 15 to abate, remediate or correct such pollution. Any such corrective or remedial action order ~~shall~~ must take into account any applicable groundwater quality protection standards, the existing use of such waters, the reasonable uses of such waters, background water quality, and the protection of human health and the environment.

4.11.5.a. Within 90 days of finding that any of the constituents listed in Appendix II have been detected at a statistically significant level exceeding the groundwater protection standards defined under section 4.11.3.h or 4.11.3.i of this rule, the permittee must initiate an assessment of corrective measures.

4.11.5.a.A. Such an assessment must be completed within a period

of time as agreed to in writing by the director.

4.11.5.b. The permittee must continue to monitor in accordance with the assessment monitoring program as specified in section 4.11.3.

4.11.5.c. The assessment must include an analysis of the effectiveness of potential corrective measures in meeting all of the requirements and objectives of the remedy as described under section 4.11.6, addressing at least the following:

4.11.5.c.A. The performance, reliability, ease of implementation, and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination;

4.11.5.c.B. The time required to begin and complete the remedy;

4.11.5.c.C. The costs of remedy implementation; and

4.11.5.c.D. The institutional requirements such as state or local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy(ies).

4.11.5.d. The permittee must discuss the results of the corrective measures assessment, prior to the selection of remedy, in a public meeting with interested and affected parties.

4.11.6. Selection of Remedy.

4.11.6.a. Based on the results of the corrective measures assessment conducted under section 4.11.5 the permittee must select a remedy that, at a minimum, meets the standards listed in section 4.11.6.b.

4.11.6.a.A. The permittee must notify the director, within 14 days of selecting a remedy, a report describing the selected remedy has been placed in the operating record and how it meets the standards in section 4.11.6.b.

4.11.6.b. Remedies must:

4.11.6.b.A. Be protective of human health and the environment;

4.11.6.b.B. Attain the groundwater protection standard as specified pursuant to sections 4.11.3.h or 4.11.3.i;

4.11.6.b.C. Control the source(s) of releases so as to reduce or eliminate further releases of Appendix II constituents into the environment; and

4.11.6.b.D. Comply with standards for management of wastes as specified in section 4.11.7.d.

4.11.6.c. In selecting a remedy that meets the standards of section 4.11.6.b, the permittee must consider the following evaluation factors:

4.11.6.c.A. The long and short-term effectiveness and protectiveness of the potential remedy(ies), along with the degree of certainty that the remedy(ies) will prove successful based on consideration of the following:

4.11.6.c.A.(a) Magnitude of reduction of existing risks;

4.11.6.c.A.(b) Magnitude of residual risks in terms of likelihood of further releases due to waste remaining following implementation of a remedy;

4.11.6.c.A.(c) The type and degree of long-term management required, including monitoring, operation, and maintenance;

4.11.6.c.A.(d) Short-term risks that might be posed to the community, workers, or the environment during implementation of such a remedy, including potential threats to human health and the environment associated with excavation, transportation, and re-disposal of containment;

4.11.6.c.A.(e) Time until full protection is achieved;

4.11.6.c.A.(f) Potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, re-disposal, or containment;

4.11.6.c.A.(g) Long-term reliability of the engineering and institutional controls; and

4.11.6.c.A.(h) Potential need for replacement of the remedy.

4.11.6.c.B. The effectiveness of the remedy in controlling the source to reduce further releases based on consideration of the following factors:

4.11.6.c.B.(a) The extent to which containment practices will reduce further releases;

4.11.6.c.B.(b) The extent to which treatment technologies may be used;

4.11.6.c.C. The ease or difficulty of implementing a potential remedy(ies) based upon consideration of the following types of factors:

4.11.6.c.C.(a) Degree of difficulty associated with constructing the technology;

4.11.6.c.C.(b) Expected operational reliability of the technologies;

4.11.6.c.C.(c) Need to coordinate with and obtain necessary approvals and permits from other agencies;

4.11.6.c.C.(d) Availability of necessary equipment and

specialists; and

4.11.6.c.C.(e) Available capacity and location of needed treatment, storage, and disposal services.

4.11.6.c.D. Practicable capability of the permittee, including a consideration of the technical and economic capability.

4.11.6.c.E. The degree to which community concerns are addressed by a potential remedy(ies).

4.11.6.d. The permittee must specify as part of the selected remedy a schedule(s) for initiating and completing remedial activities.

4.11.6.d.A. Such a schedule must require the initiation of remedial activities within period of time agreed to in writing by the director, taking into consideration the factors set forth in section 4.11.6.d.

4.11.6.d.B. The permittee must consider the following factors in determining the schedule of remedial activities:

4.11.6.d.B.(a) Extent and nature of contamination;

4.11.6.d.B.(b) Practical capabilities of remedial technologies in achieving compliance with groundwater protection standards established under sections 4.11.3.g or 4.11.3.h and other objectives of the remedy;

4.11.6.d.B.(c) Availability of treatment or disposal capacity for wastes managed during implementation of the remedy;

4.11.6.d.B.(d) Desirability of utilizing technologies that are not currently available, but which may offer significant advantages over already available technologies in terms of effectiveness, reliability, safety, or ability to achieve remedial objectives;

4.11.6.d.B.(e) Potential risks to human health and the environment from exposure to contamination prior to completion of the remedy;

4.11.6.d.B.(f) Resource value of the aquifer including:

4.11.6.d.B.(f)(A) Current and future uses;

4.11.6.d.B.(f)(B) Proximity and withdrawal rate of users;

4.11.6.d.B.(f)(C) Groundwater quantity and quality;

4.11.6.d.B.(f)(D) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituent(s);

4.11.6.d.B.(f)(E) The hydrogeologic characteristic of the facility and surrounding land;

4.11.6.d.B.(f)(F) Groundwater removal and treatment costs;

and

4.11.6.d.B.(f)(G) The cost and availability of alternative water supplies.

4.11.6.d.B.(g) Practicable capability of the permittee.

4.11.6.d.B.(h) Other relevant factors.

4.11.6.e. The director may determine that remediation of a release of an Appendix II constituent from a SWLF is not necessary if the permittee demonstrates to the satisfaction of the director that:

4.11.6.e.A. The groundwater is additionally contaminated by substances that have originated from a source other than a SWLF and those substances are present in concentrations such that cleanup of the release from the SWLF would provide no significant reduction in risk to actual or potential receptors; or

4.11.6.e.B. The constituent(s) is present in groundwater that:

4.11.6.e.B.(a) Is not currently or reasonably expected to be a source of drinking water; and

4.11.6.e.B.(b) Is not hydraulically connected with waters to which the hazardous constituents are migrating or are likely to migrate in a concentration(s) that would exceed the groundwater protection standards established under section 4.11.3.h or 4.11.3.i; or

4.11.6.e.C. Remediation of the release(s) is technically impracticable; or

4.11.6.e.D. Remediation results in unacceptable cross-media impacts.

4.11.6.f. A determination by the director pursuant to section 4.11.6.e. must not affect the authority of the state to require the permittee to undertake source control measures or other measures that may be necessary to eliminate or minimize further releases to the groundwater, to prevent exposure to the groundwater, or to remediate the groundwater to concentrations that are technically practicable and significantly reduce threats to human health or the environment.

4.11.7. Implementation of the Corrective Action Program.

4.11.7.a. Based on the schedule established under section 4.11.6.d for initiation and completion of remedial activities the permittee must:

4.11.7.a.A. Establish and implement a corrective action groundwater monitoring program that:

4.11.7.a.A.(a) At a minimum, meet the requirements of an assessment monitoring program under section 4.11.3;

4.11.7.a.A.(b) Indicate the effectiveness of the corrective action remedy; and

4.11.7.a.A.(c) Demonstrate compliance with groundwater protection standard pursuant to section 4.11.7.e.

4.11.7.a.B. Implement the corrective action remedy selected under section 4.11.6; and

4.11.7.a.C. Take any interim measures necessary to ensure the protection of human health and the environment.

4.11.7.a.C.(a) Interim measures must, to the greatest extent practicable, be consistent with the objectives of and contribute to the performance of any remedy that may be required pursuant to section 4.11.6.

4.11.7.a.C.(b) The following factors must be considered by a permittee in determining whether interim measures are necessary:

4.11.7.a.C.(b)(A) Time required to develop and implement a final remedy;

4.11.7.a.C.(b)(B) Actual or potential exposure of nearby populations or environmental receptors to hazardous constituents;

4.11.7.a.C.(b)(C) Actual or potential contamination of drinking water supplies or sensitive ecosystems;

4.11.7.a.C.(b)(D) Further degradation of the groundwater that may occur if remedial action is not initiated expeditiously;

4.11.7.a.C.(b)(E) Weather conditions that may cause hazardous constituents to migrate or be released;

4.11.7.a.C.(b)(F) Risks of fire or explosion, or potential for exposure to hazardous constituents as a result of an accident or failure of a container or handling system; and

4.11.7.a.C.(b)(G) Other situations that may pose threats to human health and the environment.

4.11.7.b. A permittee may determine, based on information developed after implementation of the remedy has begun or other information, that compliance with requirements of section 4.11.6.b are not being achieved through the remedy selected.

4.11.7.b.A. In such cases, the permittee must implement other methods or techniques that could practicably achieve compliance with the requirements, unless the permittee makes the determination under section 4.11.7.c.

4.11.7.c. If the permittee determines that compliance with requirements under section 4.11.6.b of this rule cannot be practically achieved with any currently available methods, the permittee must:

4.11.7.c.A. Obtain certification of a qualified groundwater scientist and approval by director that compliance with requirements under section 4.11.6.b cannot be practically achieved with any currently available methods;

4.11.7.c.B. Implement alternative measures to control exposure of humans or the environment to residual contamination, as necessary to protect human health and the environment; and

4.11.7.c.C. Implement alternative measures for control of the sources of contamination, or for removal or decontamination of equipment, units, devices, or structures that are:

4.11.7.c.C.(a) Technically practicable; and

4.11.7.c.C.(b) Consistent with the overall objective of the remedy.

4.11.7.c.D. Notify the director within 14 days that a report justifying the alternative measures prior to implementing the alternative measures has been placed in the operating record.

4.11.7.d. All solid wastes that are managed pursuant to a remedy required under section 4.11.6, or an interim measure required under section 4.11.7.a.C must be managed in a manner:

4.11.7.d.A. That is protective of human health and the environment; and

4.11.7.d.B. That complies with applicable RCRA requirements.

4.11.7.e. Remedies selected pursuant to section 4.11.6 must be considered complete when:

4.11.7.e.A. The permittee complies with the groundwater protection standards established under sections 4.11.3.h or 4.11.3.i at all points within the plume of contamination that lie beyond the groundwater monitoring well system established under section 3.8.4 and 3.8.4.a.

4.11.7.e.B. Compliance with the groundwater protection standards established under section 4.11.3.h or 4.11.3.i have been achieved by demonstrating that concentrations of Appendix II constituents have not exceeded the groundwater protection standard(s) for a period of three consecutive years using the statistical procedures and performance standards in sections 4.11.1.g and 4.11.1.h of this rule.

4.11.7.e.B.(a) The director may specify an alternative length of time during which the permittee must demonstrate that concentrations of Appendix II constituents have not exceeded the groundwater protection standard(s) taking into consideration:

4.11.7.e.B.(a)(A) Extent and concentration of the release(s);

4.11.7.e.B.(a)(B) Behavior characteristics of the hazardous constituents in the groundwater;

4.11.7.e.B.(a)(C) Accuracy of monitoring or modeling techniques, including any seasonal, meteorological, or other environmental variabilities that may affect the accuracy; and

4.11.7.e.B.(a)(D) Characteristics of the groundwater.

4.11.7.e.C. All actions required to complete the remedy have been satisfied.

4.11.7.f. Upon completion of the remedy, the permittee must notify the director within 14 days that a certification that the remedy has been completed in compliance with the requirements of section 4.11.7.e has been placed in the operating record.

4.11.7.f.A. The certification must be signed by the permittee and by a qualified groundwater scientist and approved by the director.

4.11.7.g. When, upon completion of the certification, the director determines that the corrective action remedy has been completed in accordance with the requirements under section 4.11.7.e, the permittee must be released from the requirements for financial assurance for corrective action under section 3.7.10.a.

4.12. Reporting.

4.12.1. Daily Logs.

Accurate, complete and true daily logs must be kept by the operator describing the type, amount, and origin of all solid waste received at the solid waste facility. These daily logs must be kept on file at the facility and include:

4.12.1.a. A description of waste handling problems or emergency disposal activities;

4.12.1.b. A record of deviations from the approved design or operational plans; and

4.12.1.c. A record of actions taken to correct violations of the ~~act~~ Act, other state ~~acts~~ Acts, and the division's ~~Department's~~ rules and regulations.

4.12.2. ~~Monthly~~ Tonnage and Monitoring Reports.

4.12.2.a. Monthly Solid Waste Tonnage Reports.

4.12.2.a.A. Monthly solid waste tonnage reports describing the type, amount, and origin received at the solid waste facility for the month must be submitted to the ~~chief~~ director before the twentieth ~~fifteenth~~ day of the following month.

4.12.2.a.B. The monthly tonnage report ~~shall~~ must also include

results of the hazardous waste exclusion efforts as required by section 4.6.1.a.F of ~~these regulations~~ this rule.

4.12.2.b. Groundwater Monitoring Reports.

4.12.2.b.A. The ground ~~and surface~~ water sampling analysis monitoring reports and accompanying report of determining whether there was a statistically significant increase over background values for each parameter or constituent required in the particular groundwater monitoring program that applies to the facility, as determined for Phase I and Phase II monitoring programs, as required in section 4.11 of ~~these regulations~~ this rule ~~shall~~ must be submitted with the monthly solid waste reports due before the twentieth ~~fifteenth~~ day of April, July, October ~~November~~, and January.

4.12.2.c. Surface Water Monitoring Reports.

The surface water sampling analysis monitoring reports must be submitted as required by §22-11 and the rules promulgated thereunder.

4.12.2.c. Leachate Monitoring Reports.

The leachate sampling analysis monitoring reports must be submitted as required by §22-11 and the rules promulgated thereunder.

4.12.2.d. Reporting and Recordkeeping.

A copy of ~~this~~ the monthly tonnage and the monitoring reports ~~shall~~ must also be sent to the county or regional solid waste authority for the county or counties in which the solid waste originated from. Copies of all of ~~these~~ reports required by this section must be kept on file at the solid waste facility.

4.12.3. Annual Operational Report.

An annual solid waste facility operational report must ~~is to~~ be submitted for the current ~~previous~~ calendar year to the ~~chief~~ director before January 31 of the following year.

4.12.3.a. The report ~~should~~ must include:

4.12.3.a.A. Updated list of users of the facility;

4.12.3.a.B. Summary of the daily logs of solid waste received during the previous year;

4.12.3.a.C. Summary of the previous year's surface and groundwater monitoring activities; and

4.12.3.a.D. A brief narrative describing the status of development, construction, maintenance, expansion, and closure of all facilities or portion of facilities ~~as~~ that are a part of the approved solid waste facility.

4.12.3.b. The annual solid waste facility operational report for

landfills ~~shall~~ must also include:

4.12.3.b.A. A topographic map showing the permitted area, location of current working areas and completed areas in relationship to the grid system of the solid waste sequencing plan;

4.12.3.b.B. Cross-sections ~~showing volume~~ of the area that has been filled; and

4.12.3.b.C. Computations estimating the volume of the area that has been filled, and the volume of the remaining useful life of the facility, in months.

4.13. ~~Other~~ Acceptance and Handling of Special Solid Wastes.

4.13.1. General.

4.13.1.a. Except as expressly specified by ~~these regulations, or in~~ an order or other written approval by ~~of~~ the ~~chief or the~~ director, a solid waste facility may receive only those ~~any~~ solid wastes allowed by its permit. Facilities may receive solid waste that requires special handling methods for processing or disposal only with express written approval of the ~~chief or the~~ director, or by specific provisions within the facility permit. If it is not clear that a particular waste is within the authorized wastes that a permitted facility may receive, the permittee ~~shall~~ must request and receive a letter of permission from the ~~chief or the~~ director before receiving the waste.

4.13.1.b. Nothing ~~shall~~ must limit or affect the power of the ~~chief or the~~ director to prohibit or require special handling requirements ~~he~~ determined to be ~~are~~ necessary to protect the environment or the health, safety, and welfare of the public.

4.13.1.c. Special wastes such as discarded chemicals and pesticides not regulated as hazardous wastes, oil spill cleanup, underground storage site residues from cleanup, properly treated pesticide containers, and contaminated food products and fabrics requiring supervised disposal are examples of the type of special wastes for which approval by the ~~chief or the~~ director would be required before permitted solid waste management facilities could receive and dispose of the products.

4.13.1.c.A. Any analytical laboratory performing services for a special waste generator or a contractor under his or her employ must not profit from the treatment, removal or disposal of such waste, and must sign an affidavit stating such facts on a form provided by the director.

4.13.1.c.B. The permittee must provide a waste profile/chain of custody document to the director when requesting approval to dispose of any special waste at his/her commercial solid waste facility on forms provided by the director. Any solid waste landfill which is granted approval to accept special waste for disposal, such as petroleum contaminated soil for example must, at a minimum, maintain on-site at the facility a HNU Photoionizer, or equivalent, to monitor the levels of total organic volatiles (TOVs) present in soil being aerated to ensure that total TOVs are less than one hundred parts per million (100 ppm) prior to disposal of waste soil in the landfill or for

use of the soil as daily cover.

Note: The use of any trade name does not imply endorsement by the West Virginia Division of Environmental Protection.

4.13.2. Asbestos Wastes.

The permittee ~~shall~~ must ensure that every individual involved in the management of wastes is protected from exposure in conformance with the provisions of ~~these regulations~~ this rule and other applicable state and federal statutes, rules and regulations.

4.13.2.a. Packaging of Friable and Nonfriable Category II Asbestos Materials.

All solid wastes that may contain friable or nonfriable category II asbestos ~~shall~~ must be placed in double plastic bags and sealed or encased in two sealed layers of plastic wrap. Each bag or layer must be six (6) mils thick or greater and boldly marked **"CAUTION: CONTAINS ASBESTOS FIBERS. AVOID CREATING DUST. CANCER AND LUNG DISEASE HAZARD."** ~~"CAUTION: ASBESTOS FIBERS. AVOID CREATING DUST. BREATHING ASBESTOS DUST MAY CAUSE SERIOUS BODILY HARM" or "CAUTION: CONTAINS ASBESTOS FIBERS. AVOID OPENING OR BREAKING CONTAINER. BREATHING ASBESTOS IS HAZARDOUS TO YOUR HEALTH."~~ The name and address of the generator ~~shall~~ must also be marked on the container. Use of sealed cardboard containers or fiber drums may be required for dense waste or as extra protection against breaking of bags. Other special handling or packaging methods may be approved where equal environmental protection ~~may be~~ is, or will be achieved. Such alternative ~~alternate~~ methods ~~shall~~ must only be considered where bagging, wrapping, or packaging is proven not to be possible.

4.13.2.b. Transportation of Friable Asbestos Materials for Disposal.

Properly packaged asbestos wastes must ~~should~~ be transported in a closed conveyance with the crew segregated from the load. Asbestos waste must be accompanied by appropriate shipping papers to identify the waste, its origin, and its destination.

4.13.2.c. Disposal of Friable and Nonfriable Asbestos Materials.

Asbestos waste ~~may~~ must be disposed in a special purpose landfill or in a special area of a landfill, and ~~shall~~ must meet the following conditions:

4.13.2.c.A. Asbestos waste ~~shall~~ must be placed in a lined area designed and constructed to meet the minimum liner requirements set forth in section 5.4.2 of ~~these regulations~~ this rule.

4.13.2.c.B. Asbestos waste ~~shall~~ must be hand placed in the trench or cell or by other means approved ~~means~~ by the director which ~~insure~~ ensure integrity of bags, wrappings, or containers.

4.13.2.c.C. Asbestos waste ~~shall~~ must not be compacted until a sealing layer of soil has been placed over the waste and precautions are taken to prevent the breaking of bags or wrapping. All accidentally broken materials ~~shall~~ must be covered with twelve (12) inches or more of soil

immediately. A cell which has been completely covered with soil, at least one (1) foot thick, may be compacted.

4.13.2.c.D. Asbestos waste ~~shall~~ must be covered with at least one (1) foot of soil at the end of each day of operation. A final cover of three (3) feet of soil ~~shall~~ must be placed over all areas that have not been in use or will not be used for more than thirty (30) days. Areas that will not or have not been used for one (1) year, in addition to final soil cover, ~~shall~~ must be graded for erosion prevention and revegetated.

4.13.2.c.E. Any active portion of the asbestos disposal area, or area which has not received final cover and revegetation, plus a fifty-foot wide buffer zone on all sides of the area, ~~shall~~ must be fenced, or a waiver from the director must be obtained. Provided; That a natural barrier exists on the site that adequately deters access by the general public. The fence ~~shall~~ must be of the six (6) feet high chain link type with three (3) strands of barbed wire on top. The fence ~~shall~~ must completely encompass ~~encircle~~ the disposal area and internal buffer zone and maintain access control through locked gates.

4.13.2.c.F. The fence ~~shall~~ must bear permanent signs every three hundred (300) feet or closer that boldly state: **"CAUTION: CONTAINS ASBESTOS FIBERS. AVOID CREATING DUST. CANCER AND LUNG DISEASE HAZARD"** in two (2) inch high or larger letters.

4.13.2.c.G. A plat of the area, surveyed and clearly marked as containing asbestos waste ~~shall~~ must be provided to the ~~chief or the~~ director upon request and ~~shall~~ must be contained and specifically noted in the deed notation as required by section 6.2.6 of ~~these regulations~~ this rule.

4.13.2.c.H. Asbestos waste ~~shall~~ must be buried below the natural ground surface of the site, or at a depth below the final grade of the landfill approved by the ~~chief~~ director, in such a manner as to maximize the prevention of wind and water erosion of the asbestos disposal area.

4.13.2.c.I. The fenced area of the asbestos disposal facility ~~shall~~ must not be located closer than fifty (50) feet to the property boundary or building or structure.

4.13.2.c.J. The permittee is required to maintain records for a period of three (3) years on the nature and quantity of asbestos waste and the source.

4.13.3. Liquids.

Free liquids cannot be disposed of in a landfill. Free liquids and poorly-contained liquids ~~shall~~ must be absorbed on solid material before being placed in a landfill.

4.13.3.a. Permittees must not place bulk or noncontainerized liquid waste in SWLF unless:

4.13.3.a.A. The waste is household waste other than septic waste; or

4.13.3.a.B. The waste is leachate or gas condensate derived from the SWLF, whether it is a new or existing SWLF or lateral expansion, is designed with a composite liner and leachate collection system as described in section 4.5.4.a.B of this rule.

4.13.3.a.C. The Permittee must place the demonstration in the operating record and notify the director that it has been placed in the operating record.

4.13.3.b. Permittees must not place containers holding liquid waste in a SWLF unless:

4.13.3.b.A. The container is a small container similar in size to that normally found in household waste;

4.13.3.b.B. The container is designed to hold liquids for use other than storage; or

4.13.3.b.C. The waste is household waste.

4.13.4. Tires.

More than one thousand (1,000) used tires shall not be stored at a facility unless the permit for the facility expressly allows such storage. Tires disposed of in a landfill must be split, cut, or shredded before disposal and must be dispersed in the workface with other solid wastes. Alternative burial not incorporating cutting or splitting at a specific facility may be approved if the method will assure that tires will not emerge.

4.13.5. Drums.

Except as provided in section 4.13.5.a of ~~these regulations~~ this rule, drums and other bulk containers ~~shall~~ must not be disposed until emptied and crushed. Pesticide containers must be triple rinsed before disposal.

4.13.5.a. Fiber drums of asbestos which are to be disposed of in designated asbestos disposal areas in accordance with the provisions of section 4.13.2 of ~~these regulations~~ this rule need not be either emptied or crushed.

4.13.6. Bulky Goods.

Appliances and other bulky waste goods may be accumulated at a facility for not more than sixty (60) days prior to disposal. An alternative ~~alternate~~ schedule may be approved by the director.

4.13.7. Infectious Waste.

Waste ~~which has the appearance of infectious waste,~~ as defined in section 2 of ~~these regulations~~ this rule, ~~shall~~ must not be disposed of in a landfill except in accordance with section 4.7.2.f of ~~these regulations~~ this rule. Nonhazardous bottom ash from the incineration of infectious waste ~~shall~~ must not be considered infectious waste.

4.13.8. Sewage Sludge.

4.13.8.a. Sewage sludge disposed at a landfill ~~shall~~ must contain at least twenty percent (20%) solid by weight. This requirement may be met by adding or blending sand, sawdust, lime, leaves, soil, or other materials that have been approved by the ~~chief~~ director prior to disposal. Alternative sludge disposal methods can be utilized upon obtaining written approval from the ~~chief~~ director.

4.13.8.b. Sewage sludge may not represent more than twenty-five percent (25%) by weight of the total weight of waste disposed of at the landfill on any working day.

4.13.8.c. The division ~~Department~~ may require the landfill operator to periodically sample and analyze incoming sewage sludge.

4.13.9. Shredder Fluff.

Shredder fluff ~~shall~~ must not be disposed of in any facility unless specifically approved in writing by the ~~chief~~ director.

4.13.10. Municipal Incinerator Ash.

Ash from municipal incinerators ~~shall~~ must be disposed of on a liner system that conforms to the requirements of 47 ~~C.S.R.~~ CSR 35.

4.13.11. Petroleum-Contaminated Soils.

Soils contaminated with petroleum ~~shall~~ must be disposed of in a manner prescribed by the director.

§47-38-5. Other Solid Waste Facility Performance Standards.

5.1. Requirements for Incinerators.

5.1.1. General Requirements.

5.1.1.a. The incinerator must be located, designed, and operated in accordance with section 5.1 of this rule ~~these regulations~~.

5.1.1.b. Waste characterization must be performed in accordance with section 5.1 of this rule ~~these regulations~~.

5.1.2. Location Criteria.

5.1.2.a. No person may establish, construct, operate, maintain or permit the use of property for any facility:

5.1.2.a.A. Within a 100-year floodplain; or

5.1.2.a.B. Within an area where there is a reasonable probability that the facility will cause:

5.1.2.a.B.(a) A significant adverse impact upon natural

wetlands;

5.1.2.a.B.(b) A significant adverse impact upon any endangered or threatened species of animal or plant;

5.1.2.a.B.(c) A ~~statistically~~ significant adverse impact upon any surface water;

5.1.2.a.B.(d) A ~~statistically~~ significant adverse impact upon groundwater quality; or

5.1.2.a.B.(e) The migration and concentration of explosive gases in any facility structures, excluding any leachate collection system or gas control or recovery system components or in the soils or air at or beyond the facility property boundary in excess of twenty-five percent (25%) of the lower explosive limit for such gases at any time.

5.1.3. Operational Requirements.

5.1.3.a. No person may operate or maintain an incinerator except in conformance with the following minimum requirements, unless an exemption is granted by the director in writing:

5.1.3.a.A. The facility must be situated, equipped, operated, and maintained as to minimize interference with other activities in the area;

5.1.3.a.B. Adequate shelter and sanitary facilities must be available for personnel;

5.1.3.a.C. A sign must be prominently posted at the entrance to the facility which indicates the name, permit ~~license~~ number, the hours of operation, the hours waste may be received, necessary safety precautions, and any other pertinent information;

5.1.3.a.D. All incoming solid waste must be confined to the designated storage area and no putrescible waste may be stored for more than twenty-four (24) hours;

5.1.3.a.E. Solid waste must be stored in compliance with section 4.5.7.j. of this rule ~~these regulations~~;

5.1.3.a.F. Dust must be controlled in the unloading and charging areas;

5.1.3.a.G. Permanent records must be maintained including the weights of material treated, the quantity of resulting ash and residue, hours of plant operation, combustion temperatures, residence time, and other pertinent information;

5.1.3.a.H. Appropriate firefighting equipment must be available in the storage and charging areas and elsewhere as needed;

5.1.3.a.I. Arrangements must be made with local fire protection agency to provide adequate emergency firefighting forces;

5.1.3.a.J. Means of communication with emergency facilities must be provided;

5.1.3.a.K. Adequate equipment must be provided to allow cleaning after each day of operation or as may be required in order to maintain the plant in a sanitary condition;

5.1.3.a.L. The charging openings as well as all equipment throughout the plant must be provided with adequate safety equipment;

5.1.3.a.M. The facility must be designed and operated such that it will not cause a nuisance because of the emission of noxious odors, gases, contaminants, or particulate matter or exceed emission limitations established by state air pollution control ~~management~~ rules;

5.1.3.a.N. Ash and residue must be disposed of at a solid waste facility permitted by the ~~chief~~ director to accept the material or be handled by an alternative method approved in writing by the director. Approval will be issued on a case-by-case basis after review of the information contained in reports filed pursuant to section 5.1 of this rule ~~these regulations~~. Ash or residue from a facility with a design capacity of five hundred (500) pounds per hour ~~shall~~ must be placed in a monofill which ~~shall~~ must meet the design requirements of 47 ~~C.S.R.~~ CSR 35;

5.1.3.a.O. All wastewater from the facility must be discharged into a sanitary sewer or other system approved in writing by the director;

5.1.3.a.P. Upon the completion of construction of a new facility, and at least ten (10) days prior to initial operation, the ~~chief~~ director must be notified to allow inspection of the facility both prior to and during any performance test(s) and initial operation;

5.1.3.a.Q. Open burning of solid waste at the facility is prohibited;

5.1.3.a.R. No hazardous waste may be accepted for disposal;

5.1.3.a.S. An alternative disposal method, approved by the ~~chief~~ director in writing, must be used during any time that the facility is inoperative; and

5.1.3.a.T. The incoming waste must be screened to eliminate unacceptable material from entering the facility such as hazardous waste, asbestos, explosive materials, or other materials which may endanger public health and safety.

5.1.4. Waste Characterization.

5.1.4.a. The owner or operator of an incinerator with a design capacity in excess of five hundred (500) pounds per hour must undertake an ash testing program as follows:

5.1.4.a.A. An ash testing program must be completed within sixty (60) days of construction and shake-down of the incinerator. Representative

samples of both fly ash and bottom ash must be tested for physical characteristics, bulk chemical composition, analysis using the appropriate leaching test and analysis using the ~~EP~~ Toxicity Characteristic Leaching Procedure (TCLP) or other test to determine the wastes' regulatory status under federal or state hazardous waste laws. Test methods, the number of tests, detection limits, and parameters to be tested for will be specified by the ~~chief~~ director; and

5.1.4.a.B. A long-term ash testing program must be established. For the first year of operation, quarterly testing of at least one (1) sample of bottom ash and one (1) sample of fly ash must be performed using approved methods and procedures. Thereafter, annual sampling and testing must be performed. The ~~chief~~ director may specify an alternative testing program.

5.1.4.b. The owner or operator of a facility with a design capacity of five hundred (500) pounds per hour or less may be required to undertake the testing program described in section 5.1.4.a of ~~these regulations~~ this rule if the ~~chief~~ director determines through an examination of information required in section 5.1.3.a.T of ~~these regulations~~ this rule that such testing is warranted.

5.2. Requirements for Transfer Stations.

5.2.1. General.

5.2.1.a. No person may conduct transfer station activities unless the ~~chief~~ director has first issued a permit for the activities in accordance with the requirements of this rule ~~these regulations~~.

5.2.1.b. No person conducting transfer station activities may allow ash, residue, or other waste specified in section 4.13 of ~~these regulations~~ this rule to be received or handled at a transfer station unless the ~~chief~~ director has specifically approved handling that waste by ~~in~~ the permit.

5.2.1.c. No person conducting transfer station activities may:

5.2.1.c.A. Mix solid waste with, or store solid waste in such close proximity to other solid waste to create a risk of fire or explosion, or a risk to the accumulation of poisonous or otherwise harmful vapors or gases; or

5.2.1.c.B. Allow explosive waste to be processed at the facility.

5.2.1.d. Regulated hazardous waste may not be disposed, processed, or stored where transfer station activities are conducted.

5.2.2. Location Criteria.

Transfer stations must be sited in compliance with the location requirements of sections 3.1, 3.2.3 and 3.2.5 of ~~these regulations~~ this rule and may not be sited within one hundred feet (100) of a perennial stream.

5.2.3. Signs.

A person conducting transfer station activities ~~shall~~ must identify the operation by posting and maintaining a sign in accordance with section 4.6.1.a.M of this rule ~~these regulations~~.

5.2.4. Access Control.

5.2.4.a. A gate or other barriers ~~shall~~ must be maintained at potential vehicular access points to block unauthorized access to the site when an attendant is not on duty.

5.2.4.b. The operator ~~shall~~ must construct and maintain a fence or other suitable barrier around the site sufficient to prevent unauthorized access.

5.2.4.c. Access to the site ~~shall~~ must be limited to times when an attendant is on duty.

5.2.5. Access Roads.

Access roads ~~shall~~ must be designed, constructed, and maintained in accordance with section 4.5.3 of this rule ~~these regulations~~.

5.2.6. Measuring Waste.

Solid waste delivered to a transfer station ~~shall~~ must be accurately weighed or otherwise accurately measured prior to unloading in accordance with the provisions of 110 ~~C.S.R.~~ CSR 6A ~~§~~ sections 4.2 and 4.3.

5.2.7. Operations and Equipment.

5.2.7.a. Loading, unloading, storage, compaction and related activities ~~shall~~ must be conducted in an enclosed building, unless otherwise approved by the ~~chief~~ director.

5.2.7.b. The permittee ~~shall~~ must maintain on the site equipment necessary for operation of the facility in accordance with the permit. The equipment ~~shall~~ must be maintained in an operable condition.

5.2.7.c. Standby equipment ~~shall~~ must be located on the site or at a place where it can be available within twenty-four (24) hours. If a breakdown of the operator's equipment occurs, the operator ~~shall~~ must utilize standby equipment as necessary to comply with this rule ~~these regulations~~.

5.2.7.d. Equipment ~~shall~~ must be operated and maintained so as to prevent solid waste from being unintentionally removed from the storage area.

5.2.7.e. Equipment used to handle putrescible solid waste ~~shall~~ must be cleaned at the end of each working day.

5.2.8. Unloading Area.

5.2.8.a. The approach and unloading area ~~shall~~ must be adequate in size and design to facilitate the rapid unloading of solid waste from the collection vehicles and the unobstructed maneuvering of the vehicles and other

equipment.

5.2.8.b. The loading areas and unloading areas ~~shall~~ must be constructed of impervious material which is capable of being cleaned by high pressure water spray and ~~shall~~ must be equipped with drains or sumps connected to a sanitary sewer system or treatment facility to facilitate the removal of water.

5.2.8.c. If the facility has an unloading pit, the facility ~~shall~~ must have in place truck wheel curbs and tie downs that are sufficient to prevent trucks from backing into the pit or falling into the pit while unloading.

5.2.8.d. An attendant or clearly marked signs ~~shall~~ must direct vehicles to the unloading area.

5.2.8.e. The permittee ~~shall~~ must ensure that collection vehicles unload waste promptly in unloading areas.

5.2.8.f. Solid waste ~~shall~~ must be confined to the unloading area and the approved storage areas.

5.2.9. Cleaning and Maintenance.

5.2.9.a. All areas within the building ~~shall~~ must be kept clean.

5.2.9.b. The operator must ~~may~~ not allow putrescible waste to remain at the transfer station at the end of the day or for more than twenty-four (24) hours.

5.2.9.c. Plumbing ~~shall~~ must be properly maintained, and the floors ~~shall~~ must be well drained.

5.2.9.d. Macerators, hammer mills, and grinders ~~shall~~ must be cleanable and ~~shall~~ must be equipped with drains that connect to a sanitary sewer system or treatment facility.

5.2.9.e. Provision ~~shall~~ must be made for the routine operational maintenance of the facility.

5.2.10. Water Quality Protection.

All permit holders must meet the requirements of §22-11 and the rules promulgated thereunder. ~~46 C.F.R. 1~~.

5.2.11. Other Requirements.

5.2.11.a. The operator ~~shall~~ must also prevent and eliminate conditions not otherwise prohibited by ~~these regulations~~ this rule that are harmful to the environment or public health, or which create safety hazards, odors, dust, noise, unsightliness and other public nuisances.

5.2.11.b. No person may cause or allow open burning.

5.2.11.c. The operator ~~shall~~ must prevent the attraction, harborage or breeding of vectors.

5.2.11.d. Salvaging of materials must ~~may~~ not be conducted unless salvaging is controlled by the operator to prevent interference with prompt and sanitary operations and is conducted to prevent a health hazard or nuisance.

5.2.11.e. Salvaged materials ~~shall~~ must be promptly removed from the unloading area and either stored in an approved area or transported off-site.

5.2.11.f. The operator must ~~may~~ not allow litter to be blown or otherwise deposited off-site.

5.2.11.g. Fences or other barriers sufficient to control blowing litter ~~shall~~ must be located in the area immediately downwind from the unloading area, unless transfer activities are conducted within an enclosed building or the solid waste being transferred cannot create blowing litter.

5.2.11.h. Litter ~~shall~~ must be collected at least weekly from fences, roadways, tree line barriers, and other barriers and disposed or stored in accordance with the ~~act~~ Act, ~~and the~~ regulations and rules promulgated thereunder, unless a greater frequency is set forth in the permit.

5.2.11.i. A facility subject to ~~these regulations~~ this rule ~~shall~~ must be designed, constructed, maintained, and operated to prevent and minimize the potential for fire, explosion, or release of solid waste constituents to the air, water, or soil of this state that could threaten public health or safety, public welfare, or the environment.

5.2.11.j. The operator of a transfer station ~~shall~~ must meet all of the reporting requirements as specified in section 4.12 of this rule ~~these regulations~~.

5.2.11.k. The facility ~~shall~~ must be surrounded with rapidly growing trees, shrubbery, fencing, berms, or other appropriate means to screen it from the surrounding area.

5.2.11.l. Only household waste and commercial waste ~~shall~~ must be accepted at the facility. No industrial waste, infectious waste, construction and demolition debris, or hazardous waste regulated under 47 ~~C.S.R.~~ CSR 35 ~~shall~~ must be accepted unless specifically approved by the ~~chief~~ director.

5.2.11.m. All solid waste passing through the transfer station must be ultimately treated or disposed of at a facility authorized by the division ~~Department~~ if in this state, or by the appropriate governmental agency or agencies if in other states, territories, or nations.

5.2.11.n. A transfer station with operating mechanical equipment must have an attendant on duty at all times that the facility is open. Suitable fencing, gates, or signs must be provided.

5.2.11.o. All floors must be drained and free from standing water. All drainage from cleaning areas must be discharged to sanitary sewers or the

equivalent.

5.2.11.p. Adequate storage space for incoming solid waste must be available at the transfer station.

5.2.11.q. All solid waste must be removed from the transfer station facility whenever transfer containers are full, or weekly, whichever comes first.

5.3. Requirements for Recycling Facilities. (Reserved).

5.4. Requirements for Construction/Demolition "Class D" Solid Waste Facilities.

5.4.1. General Requirements.

Only the construction/demolition wastes approved in the facility permit must ~~are allowed to~~ be accepted. Putrescible, household, automobile shredder fluff, industrial and sludge wastes are prohibited.

5.4.2. Class D-1 Facility Requirements.

Class D-1 solid waste facilities ~~shall~~ must meet all of the requirements in section 4 of ~~these regulations~~ this rule unless an alternative standard from section 5.4.2 of ~~these regulations~~ this rule is met or the ~~chief~~ director has granted, upon written request, an exemption from a specific requirement of section 4 of this rule ~~these regulations~~.

5.4.2.a. A liner system for a Class D-1 solid waste facility ~~shall~~ must consist of the following elements:

5.4.2.a.A. Subbase;

5.4.2.a.B. Compacted soil liner; and

5.4.2.a.C. Leachate collection and protective cover zone.

5.4.2.b. The subbase portion of the liner system ~~shall~~ must consist of a cleared and grubbed natural ground surface capable of supporting the entire liner system.

5.4.2.c. The compacted soil liner ~~shall~~ must:

5.4.2.c.A. Be a minimum compacted thickness of two (2) feet;

5.4.2.c.B. Be compacted in six (6) inch lifts;

5.4.2.c.C. Be no more permeable than 1×10^{-6} cm/sec based on laboratory and field testing;

5.4.2.c.D. Be free of particles greater than three (3) inches in any dimension;

5.4.2.c.E. Be placed without damaging the subgrade;

5.4.2.c.F. Be placed during a period of time when both the air temperature and the soil temperature are above freezing so that neither the compacted soil nor the subbase is frozen;

5.4.2.c.G. Have a slope of at least two percent (2%) to facilitate the drainage of leachate across the liner surface; and

5.4.2.c.H. Be designed, operated, and maintained so that the physical and chemical characteristics of the liner and the liner's ability to restrict the flow of solid waste, solid waste constituents, or leachate is not adversely affected by the leachate.

5.4.2.c.I. The compacted soil construction liner certification and a Q.A./Q.C. report ~~shall~~ must be submitted to the ~~chief~~ director prior to the placement of the leachate collection and protective cover zone.

5.4.2.d. The leachate collection and protective cover zone ~~shall~~ must:

5.4.2.d.A. Create a flow zone between the compacted soil liner and solid waste more permeable than 1×10^{-3} cm/sec based on laboratory and field testing. The leachate collection zone including the piping system must be designed and placed on a minimum slope of two percent (2%) to facilitate efficient leachate drainage and prevent ponding on the composite liner;

5.4.2.d.B. Be at least eighteen (18) inches thick;

5.4.2.d.C. Be constructed of soil or earthen materials to ensure that the hydraulic leachate head on the composite liner does not exceed one (1) foot at the expected flow capacity from the drainage area except during storm events;

5.4.2.d.D. Be comprised of clean soil or earthen materials that contain no debris, plant material, rocks, or other solid material larger than one-quarter (1/4) inch in diameter and no material with sharp edges;

5.4.2.d.E. Be graded, uniformly compacted, and smoothed;

5.4.2.d.F. Be installed in a manner that prevents damage to the compacted soil liner; and

5.4.2.d.G. Contain a perforated piping system capable of intercepting liquid within the leachate collection zone and conveying the liquid to control collection points. The piping system ~~shall~~ must also meet the following:

5.4.2.d.G.(a) The slope sizing and spacing of the piping system ~~shall~~ must ensure that liquids drain efficiently from the leachate collection zone;

5.4.2.d.G.(b) The distance between pipes in the piping system may not exceed one (100) hundred feet on center;

5.4.2.d.G.(c) The pipes ~~shall~~ must be installed perpendicular

to the flow;

5.4.2.d.G.(d) The minimum diameter of the perforated pipe ~~shall~~ must be four (4) inches with a wall thickness of Schedule 40 or greater;

5.4.2.d.G.(e) The pipe ~~shall~~ must be capable of supporting anticipated loads without failure based on facility design;

5.4.2.d.G.(f) Rounded stones or aggregates ~~shall~~ must be placed around the pipes of the piping system. The stones or aggregates ~~shall~~ must be sized to prevent clogging of the pipes and damage to the composite liner;

5.4.2.d.G.(g) The piping system ~~shall~~ must be installed in a fashion that facilitates cleanout, maintenance, and monitoring. Manholes or cleanout risers ~~shall~~ must be located along the perimeter of the leachate detection piping system. The number and spacing of the manholes or cleanout risers ~~shall~~ must be sufficient to ensure proper maintenance of the piping system by water jet flushing or an equivalent method; and

5.4.2.d.G.(h) The leachate collection system ~~shall~~ must be cleaned and maintained as necessary.

5.4.2.d.H. The leachate collection zone construction certification and a Q.A./Q.C. report ~~shall~~ must be submitted to the ~~chief~~ director prior to the placement of solid waste.

~~**5.4.2.e.** Asbestos may be disposed at a Class D 1 solid waste facility if all the requirements of section 4.13.2 of these regulations are met.~~

5.4.3. Class D ~~2~~ Facility Requirements. Except as herein specified, Class D ~~2~~ solid waste facilities are exempt from the requirements of section 4 of ~~these regulations~~ this rule unless otherwise required by the director, but must comply with the requirements of sections 5.4.3.a through 5.4.3.g of ~~these regulations~~ this rule.

5.4.3.a. Access ~~shall~~ must be controlled in such a manner as to discourage unauthorized entry and ~~shall~~ must be limited to those authorized to deposit waste material and only during scheduled hours.

5.4.3.b. Construction/demolition and cover material must not be placed into a stream channel and must be placed in such a way to prevent erosion and sedimentation.

5.4.3.c. Cover material ~~shall~~ must be graded and maintained to prevent ponding and minimize erosion.

5.4.3.d. Erosion and sediment controls must be installed as necessary to prevent sedimentation.

5.4.3.e. The disturbed area ~~shall~~ must be revegetated to prevent erosion and sedimentation in accordance with section 4.5.6 of this rule ~~these regulations~~.

5.4.3.f. Except when extended by the ~~chief~~ director, ~~within one hundred and eighty (180) days from issuance of a Class D 2 solid waste facility permit~~ all operations for a Class D solid waste facility ~~shall~~ must have been completed including covering with a minimum of twenty-four (24) inches of soil, regrading, dressing up, seeding, mulching and fertilizing prior to the expiration date of the permit.

5.4.3.g. The permittee ~~shall~~ must notify the ~~chief~~ director ~~within sixty (60) days prior to the expiration date of the permit~~ to arrange for a final inspection prior to removing equipment from the site. All site reclamation must be completed before equipment removal.

5.4.3.h. The ~~chief~~ director may require a Class D ~~2~~ solid waste facility to meet any specific requirement in section 4 of this rule ~~these regulations~~.

~~**5.4.4. Class D 3 Facility Requirements.** Except as herein specified, Class D 3 solid waste facilities are exempt from the requirements of section 4 of these regulations but must comply with the requirements in sections 5.4.4.a through 5.4.4.e of these regulations.~~

~~**5.4.4.a.** Construction/demolition and cover material must not be placed into a stream channel.~~

~~**5.4.4.b.** The entire site must be constructed to prevent ponding and minimize erosion.~~

~~**5.4.4.c.** Erosion and sediment control structures must be installed as necessary to prevent sedimentation.~~

~~**5.4.4.d.** The disturbed area must be revegetated in accordance with section 4.5.6 of these regulations.~~

~~**5.4.4.e.** Within one hundred and eighty (180) days from issuance of a certificate of approval for disposal all operations on a Class D 3 solid waste facility shall have been completed including final disposal, covering with a minimum of twenty four (24) inches of soil, regarding, dressing up, seeding, mulching and fertilizing.~~

~~**5.4.4.f.** The chief may require a Class D 3 solid waste facility to meet any specific requirement in section 4 of these regulations.~~

5.5. Requirements for Class F Solid Waste Facilities.

Except as provided in section 5.5 of this rule ~~these regulations~~, all requirements of these regulations shall be applicable to Class F solid waste facilities.

5.5.1. Waivers and Modifications.

During the permit issuance process or upon written request or appropriate notation on the application by the permittee, the director ~~chief~~ may waive or modify the requirements of the subsections of section 3 of this rule ~~these regulations~~ that are listed in section 5.5.1.a of this rule ~~these regulations~~

and the requirements of the subsections of section 4 of this rule ~~these regulations~~ that are listed in section 5.5.1.b of this rule ~~these regulations~~. Failure of the applicant to supply documentation requested by the director ~~chief~~, which is necessary to justify the requested waiver or modification, are ~~shall be~~ grounds for wavier or modification denial. Each request for waiver or modification of a requirement of section 3 or 4 of this rule must ~~these regulations shall~~ be based upon sound engineering judgement taking into consideration the type of waste to be disposed, the type facility, and site characteristics.

5.5.1.a. The following requirements of section 3 of this rule ~~these regulations~~ which may be waived or modified by the director ~~chief~~: sections 3.4, 3.7.6.g, 3.7.10, 3.7.11, 3.7.13, 3.8.3.a.C.(d), 3.8.4.d.A, 3.10.1.f, 3.10.3, 3.13, 3.14, and 3.16.4 of this rule ~~these regulations~~.

5.5.1.a.A. The requirements of sections 3.8.4.e, 3.8.9.a.B, 3.9, 3.10.1.a and 3.11.3 of this rule ~~these regulations~~ and the gas monitoring and control provisions of sections 3.10.1.b, 3.10.1.d, and 3.10.2.c of this rule ~~these regulations~~ may also be waived or modified by the director ~~chief~~ for coal combustion by-product facilities.

5.5.1.b. The following requirements of section 4 of this rule ~~these regulations~~ which may be waived or modified by the director ~~chief~~ for Class F ~~coal combustion by product~~ facilities: sections 4.4, 4.5.2.c.A.(c), 4.5.3, 4.5.4, 4.5.7.g, 4.5.7.h, 4.5.7.i, 4.5.7.j, 4.6.2.a.B, 4.6.2.a.C, 4.6.2.b.A, 4.6.2.b.B, 4.6.2.b.D, 4.8.3.c.B, 4.10, 4.12, and 4.13.2.c of this rule ~~these regulations~~.

5.5.2. Requirements for Coal Combustion By-Product Facilities.

5.5.2.a. Liner System Requirements.

Liner system requirements for coal combustion by-product landfills, solid waste disposal surface impoundments and surface impoundments, or portions thereof, placed in operation after the effective date of this rule must ~~these regulations shall~~ be as follows:

5.5.2.a.A. The liner system for landfills shall consists of eighteen (18) inches of clay, having a permeability no greater than 1×10^{-7} centimeters per second and compacted in six (6) inch lifts to a Standard Proctor density of at least ninety-five percent (95%) as determined by ASTM D-698. A sixty (60) mil HDPE synthetic liner shall be installed on top of the compacted clay liner. A leachate collection system consisting of a perforated piping system embedded within an eighteen (18) inch drainage layer, which can consist of bottom ash, having a minimum permeability of 1×10^{-3} centimeters per second shall be installed on top of the synthetic liner. The eighteen (18) inch leachate collection system layer shall serve as the protective cover for the synthetic liner.

5.5.2.a.B. The permittee may elect and construct an alternative liner system for landfills consisting of at least two (2) feet of clay having a permeability no greater than 1×10^{-7} centimeters per second and compacted in six (6) inch lifts to a Standard Proctor density of at least ninety-five percent (95%) as determined by ASTM D-698. Taking into account site-specific

conditions, an appropriate groundwater interceptor drainage system, which shall also serve as a leachate detection system, shall be installed under the clay liner in such a manner as to avoid groundwater penetration of the liner system and to facilitate detection of leachate penetrating the liner. An appropriate leachate collection system, which can consist of bottom ash, having a minimum permeability of 1×10^{-3} centimeters per second shall be installed on top of the compacted clay liner provided that this liner system is prohibited for use in major domestic use aquifer areas, major alluvial aquifers, or karst regions.

5.5.2.a.C. Other alternative liner systems for landfills may be approved by the director ~~chief~~ on a case-by-case basis. Such alternative liner system may be more or less stringent than the liner system described in section 5.5.2.a.A of this rule ~~these regulations~~ as determined by sound engineering judgement taking into consideration the type of waste to be disposed, type of facility, site characteristics, operating experience of similar landfills, and protection of the groundwater.

5.5.2.a.D. Failure of an alternative liner design at the applicant's facility may result in the director ~~chief~~ disallowing the use of identical technology in new landfills proposed by the applicant unless the applicant can demonstrate a remedy for the technology's past failure.

5.5.2.a.E. The liner system for solid waste disposal surface impoundments shall be designed and constructed with a leachate detection system imbedded in a filter media having a minimum permeability of 1×10^{-3} centimeters per second topped by eighteen (18) inches of clay having a permeability no greater than 1×10^{-7} centimeters per second and compacted in six (6) inch lifts to a Standard Proctor density of at least ninety-five percent (95%) as determined by ASTM D-698, with a sixty (60) mil synthetic liner installed over the compacted clay.

5.5.2.a.F. Other alternative liner systems for solid waste disposal surface impoundments may be considered by the director ~~chief~~ on a case-by-case basis. Such determination must ~~shall~~ be based upon sound engineering judgement taking into consideration the type of waste to be disposed, type of facility, site characteristics, and groundwater monitoring results at similar existing solid waste disposal surface impoundments.

5.5.2.a.G. For surface impoundments receiving leachate, a permittee may elect use of a liner system consisting of either eighteen (18) inches of clay having a permeability no greater than 1×10^{-7} centimeters per second and compacted to a Standard Proctor density of at least ninety-five percent (95%) as determined by ASTM D-698, with a sixty (60) mil synthetic liner installed on top of the clay; two (2) feet of clay with the aforementioned permeability rate and compaction density; or any other alternative liner system approved by the director ~~chief~~ on a case-by-case basis. Taking into account site-specific conditions, an appropriate groundwater interceptor drainage system, which must ~~shall~~ also serve as a leachate detection system, must ~~shall~~ be installed under all liner systems in such a manner as to avoid groundwater penetration of the liner system and to facilitate detection of leachate penetrating the liner.

5.5.2.a.H. The provisions of section 4.8.3.c.B of this rule ~~these~~

~~regulations~~ do not apply to coal combustion by-product surface impoundments. Surface impoundments associated with a coal combustion by-product facility ~~shall be~~ are not subject to any of the groundwater monitoring requirements of this rule ~~these regulations~~ if such impoundments are covered by the overall groundwater monitoring plan for the coal combustion by-product facility.

5.5.2.b. Operating Requirements.

Operating requirements for coal combustion by-product landfills and solid waste disposal surface impoundments in operation on or closed prior to the effective date of this rule are ~~these regulations shall be~~ as follows:

5.5.2.b.A. Operating landfills in existence on the effective date of this rule ~~these regulations~~ may remain in operation and without liner retrofit unless there is a statistically significant increase in groundwater monitoring parameters as determined by the monitoring provisions of section 4.11 of this rule ~~these regulations~~. Groundwater remediation may be determined on a case-by-case basis by the director ~~chief~~ based upon an evaluation of the information from groundwater monitoring and assessment programs, as provided for in section 4.11 of this rule ~~these regulations~~. Upon evidence of such contamination, a corrective action program may be required as described in section 4.11.5 of this rule ~~these regulations~~. Such corrective action programs may include closure in accordance with section 6 of this rule ~~these regulations~~, retrofit in accordance with section 5.5.2.a of this rule ~~these regulations~~, or other appropriate remediation measures.

5.5.2.b.B. For coal combustion by-product landfills in existence on the effective date of this rule ~~these regulations~~, the liner provisions of sections 5.5.2.a.A, 5.5.2.a.B, and 5.5.2.a.C of this rule ~~these regulations~~ and the provisions of section 4.11 of this rule ~~these regulations~~ do not apply to closed or closed portions of such landfills. Monitoring shall not be required for such facilities that are closed prior to the effective date of this rule ~~these regulations~~ except for currently-permitted closed facilities or in connection with any remedial or corrective action program ordered by the director ~~chief~~.

5.5.2.b.C. The requirements of this rule ~~these regulations~~ are not applicable to coal combustion by-product disposal surface impoundments in existence on or before the effective date of this rule ~~these regulations~~ and which are operating under a permit issued under W. Va. Code §22-11 ~~§20-5A~~, except that all such impoundments shall be required to have an adequate groundwater monitoring system in place. Groundwater remediation may be determined on a case-by-case basis by the director ~~chief~~ based upon an evaluation of the information from groundwater monitoring and assessment programs. Evidence of groundwater contamination, as determined by section 4.11 of this rule ~~these regulations~~, may require a corrective action program as described in section ~~4.11.6~~ 4.11.5 of this rule ~~these regulations~~.

~~**Editor's Note: The amendment of Section 4.11.5 and 4.11.6 by Senate Bill 243 (passed March 10, 1990) replaced 4.11.5 and 4.11.6 with a new 4.11.5.**~~

5.5.2.c. Leachate Analysis.

The requirements of section 4.8.4 of this rule ~~these regulations~~ apply to coal combustion by-product landfills and surface impoundments with the exception that the requirements in section 4.8.4.b of this rule ~~these regulations~~ shall be replaced by the following:

5.5.2.c.A. On a semi-annual basis, the chemical composition of the leachate flowing into a leachate treatment system from a coal combustion by-product facility must ~~shall~~, unless waived by the director ~~chief~~, be determined through the analysis of the leachate for the following parameters: alkalinity, arsenic, barium, bicarbonate, hardness, boron, cadmium, calcium, chloride, total and hexavalent chromium, iron, lead, manganese, magnesium, sulfate, total dissolved solids, total organic carbon (TOC), specific conductance, zinc, and any other parameter which is specifically known to be associated with the wastes in question and specified by the director ~~chief~~ in writing.

5.5.2.c.A.(a) The monitoring parameters listed in section 5.5.2.c.A of this rule must ~~these regulations shall~~ be reported as total metals, unless otherwise specified by the director ~~chief~~.

5.5.2.d. Beneficial Use of Coal Combustion By-Products.

The following uses of coal combustion by-products are deemed to be beneficial and do not require a permit under this rule ~~these regulations~~ so long as such uses are consistent with the requirements of section 5.5.2.d of this rule ~~these regulations~~:

5.5.2.d.A. Coal combustion by-products used as a material in manufacturing another product (e.g., concrete, flowable fill, lightweight aggregate, concrete block, roofing materials, plastics, paint) or as a substitute for a product or natural resource (e.g., blasting grit, filter cloth precoat for sludge dewatering);

5.5.2.d.B. Coal combustion by-products used for the extraction or recovery of materials and compounds contained within the coal combustion by-products;

5.5.2.d.C. Coal combustion by-products used as a stabilization/solidification agent for other wastes. This use of coal combustion by-products shall be considered a beneficial use for the purposes of section 5.5.2.d of this rule ~~these regulations~~ if the coal combustion by-product is used singly or in combination with other additives or agents to stabilize or solidify another waste product and if:

5.5.2.d.C.(a) The person or entity proposing the use has first given advance written notice to the director ~~chief~~; and

5.5.2.d.C.(b) The use results in altered physical or chemical characteristics of the other waste and a reduction of the potential for the resulting stabilized mixture to leach constituents into the environment;

5.5.2.d.D. Coal combustion by-products used under the authority of W. Va. Code Chapter 22, Articles 2 and 3 of the West Virginia Division of Environmental Protection ~~Department of Energy~~;

5.5.2.d.E. Coal combustion by-products used as pipe bedding or as a composite liner drainage layer;

5.5.2.d.F. Coal combustion by-products used as a daily or intermediate cover for Class A, Class B, or Class C solid waste facilities if the specific permit allows for such use;

5.5.2.d.G. Coal combustion bottom ash or boiler slag used as an anti-skid material if such use is consistent with Department of Highways specifications. The use of fly ash as an anti-skid material is not deemed to be a beneficial use; and

5.5.2.d.H. Coal combustion by-products used as a construction material (e.g., subbases, bases) for roads or parking lots that have asphalt or concrete wearing surfaces if approved by the West Virginia Division ~~Department~~ of Highways or the project owner.

Note: section 5.5.2.d of this rule ~~these regulations~~ does not specifically address the beneficial use of coal combustion by-products for structural fills and as soil amendment. These beneficial use applications will be considered in future rulemaking. Until such time, the established prior practices will be continued.

5.5.3. Requirements for Industrial Solid Waste Facilities Other Than Coal Combustion By-Product Facilities.

5.5.3.a. Liner System Requirements.

Liner system requirements for industrial solid waste landfills and solid waste disposal surface impoundments ~~shall be~~ are as follows:

5.5.3.a.A. Except as otherwise provided in section 5.5.3 of this rule ~~these regulations~~, all provisions of section 4 of this rule ~~these regulations shall be~~ are applicable to industrial solid waste landfills and industrial solid waste disposal surface impoundments constructed after the effective date of this rule ~~these regulations~~.

5.5.3.a.A.(a) Any provision of section 4 of this rule ~~these regulations~~ may be waived or modified by the director ~~chief~~ upon written request of the permittee if such provision, in the discretion of the director ~~chief~~, clearly does not apply to the industrial solid waste facility or where the waiver or modification is shown to be appropriate for the facility type, type of waste disposed, or site characteristics. Any alternative approved by the director ~~chief~~ shall be based upon good engineering judgement.

5.5.3.a.B. For industrial solid waste landfills in existence on the effective date of this rule ~~these regulations~~, the liner provisions in sections 4 and 5.5 of this rule do ~~these regulations shall~~ not apply to closed or closed portions of such landfills. However, the liner provisions ~~shall be~~ apply to any expansion of such facilities. In order to continue to use an active portion of an existing landfill which is unlined after November 5, 1991, the permittee must enter into a compliance schedule requiring such active unlined portions to be closed or retrofitted where appropriate in accordance with this rule ~~these regulations~~ by an agreed date by which all

waste must thereafter be placed on an approved liner system, which date shall be no later than thirty (30) months following the effective date of this rule ~~these regulations~~.

5.5.3.a.C. Solid waste disposal surface impoundments in operation on the effective date of this rule ~~these regulations~~ may continue operation throughout the design life of the impoundment, provided the impoundment ~~shall~~ must not be expanded to a size greater than the design approved by the director ~~chief~~ in the permit last issued for the facility. Groundwater remediation may be determined on a case-by-case basis by the irector ~~chief~~ based upon an evaluation of the information developed under the assessment provisions of section 4.11.5 of this rule ~~these regulations~~.

5.5.3.b. Appropriate monitoring provisions of section 4.11 of this rule ~~these regulations~~ shall be incorporated into the permits for industrial solid waste landfills and industrial solid waste disposal surface impoundments in operation on the effective date of this rule ~~these regulations~~. No monitoring shall be required for such facilities closed prior to the effective date of this rule ~~these regulations~~ except for closed facilities under a permit as of the effective date of this rule ~~these regulations~~ or in connection with any remedial or corrective action program ordered by the director ~~chief~~.

5.6. Requirements for Uncommon or Miscellaneous Facilities.

5.6.1. Green Boxes, Bins, roll-offs and Dumpsters.

~~**5.6.1.a.** Each person who causes to be placed a dumpster at places other than approved solid waste facilities, shall notify the director of the location, number of containers, size of containers, and any other information as requested by the director.~~

5.6.1.a. ~~5.6.1.b.~~ Each person who causes to be placed a green box, bin, roll-off or dumpster at places other than approved solid waste facilities ~~shall be~~ are responsible for maintenance, prevention of litter, ~~and~~ open dump control, and leachate management at the site of the dumpster.

5.6.2. Composting. (Reserved)

Note: Composting requirements are regulated under Title 47 Series 38D "Sewage Sludge Management Regulations," and Title 47 Series 38E "Yard Waste Composting Regulations."

§47-38-6. Closure and Post-Closure Care ~~Bond Release~~.

6.1. Permanent Closure Criteria.

6.1.1. Applicability.

Any person who maintains or operates a solid waste facility must, when the fill area or portion thereof reaches final grade or when the ~~chief~~ director determines that closure is required, cease to accept waste and perform closure activities at ~~close~~ the facility or portion thereof in accordance with the plan approval issued by the ~~chief~~ director and the provisions of section 6.1

of ~~these regulations~~ this rule unless otherwise approved by the ~~chief~~ director in writing.

6.1.1.a. Upon request of the permittee, or upon the director's ~~his~~ own initiative, the ~~chief~~ director may waive or modify any of the closure requirements of section 6 of ~~these regulations~~ this rule or allow alternative permit conditions or practices as appropriate for a specific coal combustion by-product facility or industrial solid waste facility based upon the type of wastes disposed, type of facility, site characteristics and sound engineering judgement.

6.1.1.b. Closure of existing solid waste landfills.

6.1.1.b.A. Existing SWLFs that cannot make the demonstration specified in section 3.2.7 pertaining to airports, section 3.2.4 pertaining to floodplains, or section 3.2.10 pertaining to unstable areas, must close by October 9, 1996, in accordance with section 6.1 of this rule and conduct post-closure activities in accordance with section 6.3 of this rule.

6.1.1.b.B. The deadline for closure may be extended up to two years if the permittee can demonstrate to the director in writing that:

6.1.1.b.B.(a) There is no available alternative disposal capacity;

6.1.1.b.B.(b) There is no immediate threat to human health and the environment.

6.1.2. Notification Procedures.

6.1.2.a. At least one hundred and twenty (120) days prior to closing the facility, the permittee ~~shall~~ must notify the ~~chief~~ director in writing of the intent to close the facility and the expected date of closure. Prior to this date, the permittee ~~shall~~ must notify all users of the facility of the intent to close the facility so that alternative disposal options may be evaluated ~~can be arranged~~.

6.1.2.b. Signs ~~shall~~ must be posted at all points of access to the facility at least thirty (30) days prior to closure indicating the date of closure and alternative disposal facilities.

6.1.2.c. Notice of the upcoming closure ~~shall~~ must be a Class II legal advertisement which must be published in a local newspaper at least thirty (30) days prior to closure and a copy of the notice must be provided to the ~~chief~~ director within ten (10) days of the date of publication.

6.1.3. Restricted Access.

Within ten (10) days after ceasing to accept waste, the permittee ~~shall~~ must restrict access by the use of gates, fencing, or other appropriate means to ensure against further use of the facility. If the final use allows access, such access must be restricted until closure has been completed and approved by the ~~chief~~ director.

6.1.4. Deed Notation.

6.1.4.a. Following ~~Upon~~ closure of all portions of the SWLF ~~a landfill~~, the owner or operator must record a deed notation to the SWLF facility property with the county clerk's office that ~~shall~~ must be available with the deed of the property that will in perpetuity notify any potential purchaser ~~that:~~ of the following: (The permittee must also retain a copy of the deed notation in the facility operating record.)

6.1.4.a.A. The land has been used as a landfill facility;

6.1.4.a.B. Its use is restricted under section 6.3.6.c to ensure post-closure care including any use that would interfere with maintaining the integrity and effectiveness of the final cover and maintaining the system to control the formation and release of leachate and explosive gases into the environment.

6.1.4.a.C. The permittee may request permission from the director to remove the notation from the deed if all wastes are removed from the facility.

6.1.4.b. The deed ~~shall~~ must include at a minimum:

6.1.4.b.A. A survey plot indicating the location and dimension of the landfill;

6.1.4.b.B. A record of waste, including type, location, and quantity of waste disposed of at the site; and

6.1.4.b.C. Disposal location of asbestos and any other waste specified by the ~~chief~~ director.

6.1.4.c. A certification of deed notation must be filed with the ~~chief~~ director within ninety (90) days of closure.

6.1.5. Closure and Post-Closure Care.

6.1.5.a. Unless otherwise approved by the ~~chief~~ director in writing, the closure plan ~~shall~~ must include the ~~following:~~ installation of a final cover system that is designed to minimize infiltration and erosion, as follows:

6.1.5.a.A. The permittee ~~shall~~ must provide a final cover system comprised of an erosion layer underlain by an infiltration layer and grading in the following manner:

6.1.5.a.A.(a) Gas Management Layer.

A one (1) foot layer of a material with a high hydraulic conductivity or a geocomposite drainage layer having a permeability of at least 1×10^{-3} cm/sec may be used in lieu of the one (1) foot drainage layer ~~shall~~ must be placed directly on the intermediate cover ~~refuse mass~~ to facilitate landfill gas control;

6.1.5.a.A.(b) Clay Cap Layer.

A cap consisting of a uniform and compacted one (1) foot layer of clay that is no more permeable than 1×10^{-7} cm/s ~~shall~~ must be placed and graded over the entire surface of each final lift in six (6) inch lifts. The ~~chief~~ director may, in the issued permit, approve the use of a synthetic material in lieu of the layer of clay;

6.1.5.a.A.(b)(A) An alternative clay cap layer may be approved by the director on a site-specific basis. In no case may this (infiltration) layer be comprised of a less than a minimum of 18 inches of earthen material that has a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less, and

6.1.5.a.A.(c) Drainage Layer.

A one (1) foot drainage layer that is more permeable than 1×10^{-3} cm/s or a geocomposite drainage layer having a permeability of at least 1×10^{-3} cm/sec may be used in lieu of the one (1) foot drainage layer, ~~and~~ capable of transmitting flow and preventing erosion ~~shall~~ must be placed over the cap. ~~and~~

6.1.5.a.A.(d) Vegetative Cover Layer.

A uniform and compacted layer of soil that is at least two (2) feet in thickness and capable of supporting vegetation ~~shall~~ must be placed over the drainage layer. The erosion layer portion of the drainage layer must consist of a minimum six (6) inches of earthen material that is capable of sustaining native plant growth.

6.1.5.a.B. Placement of Final Cover.

The operator ~~shall~~ must place final cover within six (6) months ~~one (1) year~~ after disposal in the final lift ceases or as soon thereafter as weather permits, unless the permittee ~~he~~ obtains written approval from the ~~chief~~ director allowing a later period based on a demonstration that a later period is necessary to protect the cap and drainage layer from differential settlement of waste at the facility. The ~~chief~~ director will not allow a later period unless, at a minimum, delayed installation will not cause or allow any violations of any provision of ~~these regulations~~ this rule, or based on a demonstration that a later period is necessary to protect the cap and drainage layer from differential settlement of waste at the facility.

6.1.5.a.C. Surface water run-on must be diverted around all areas used for waste disposal to limit the potential for erosion of the cover soils and increased infiltration. Drainage swales conveying surface water runoff over previous waste disposal areas must be lined with a minimum thickness of two (2) feet of earthen material or a layer of synthetic material acceptable to the ~~chief~~ director.

6.1.5.a.D. The grade of the final surface of the facility ~~shall~~ must not be less than three percent (3%) nor more than twenty-five percent (25%) unless otherwise approved by the ~~chief~~ director as a part of the issued

permit. Long slopes ~~shall~~ must incorporate runoff control measures and terracing in order to minimize erosion. For sites having a natural slope greater than twenty-five percent (25%), a slope up to thirty-three percent (33%) may be considered acceptable if terracing is incorporated at least every twenty (20) feet of vertical distance with runoff control.

6.1.5.a.E. Within ninety (90) days after the placement of final cover, the permittee ~~shall~~ must complete seeding, fertilizing, and mulching of the finished surface. The seed type and amount of fertilizer applied ~~shall~~ must be selected depending on the type and quality of topsoil and compatibility with both native vegetation and the final use. Unless otherwise approved by the ~~chief~~ director in writing, seed mixture and application rates must be in accordance with section 4.5.6 of ~~these regulations~~ this rule.

6.1.5.a.F. Additional information may be required at the discretion of the ~~chief~~ director.

6.1.5.a.G. ~~6.1.5.b.~~ A closure plan for solid waste facilities other than landfills ~~shall~~ must include the requirements of sections 6.1.5.a.D and 6.1.5.a.E of ~~these regulations~~ this rule and any other requirement specified by the ~~chief~~ director.

6.1.5.b. Alternative Final Cover Design The director may approve an alternative final cover design that includes:

6.1.5.b.A. An infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified in section 6.1.5.a.A.(b)(A) and

6.1.5.b.B. An erosion layer that provides equivalent protection from wind and water erosion as the erosion layer specified in section 6.1.5.a.A.(d).

6.1.5.c. The permittee must prepare a written closure plan that describes the steps necessary to close all portions of the SWLF at any point during its active life in accordance with the cover design requirements in section 6.1.5.a or 6.1.5.b, as applicable.

6.1.5.c.A. The closure plan, at a minimum, must include the following information:

6.1.5.c.A.(a) A description of the final cover, designed in accordance with section 6.1.5.a and the methods and procedures to be used to install the cover;

6.1.5.c.A.(b) An estimate of the largest area of the SWLF ever requiring a final cover as required under section 6.1.5.a at any time during the active life;

6.1.5.c.A.(c) An estimate of the maximum inventory of wastes ever on-site over the active life of the landfill facility; and

6.1.5.c.A.(d) A schedule for completing all activities

necessary to satisfy the closure criteria in section 6 of this rule.

6.1.5.d. The permittee must notify the director that a closure plan has been prepared and placed in the operating record no later than the effective date of this rule, or by the initial receipt of waste, whichever is later.

6.1.5.e. Prior to beginning closure of each portion of the SWLF as specified in section 6.1.5.f a permittee must notify the director that a notice of the intent to close the portion of the SWLF has been placed in the operations record.

6.1.5.f. The permittee must begin closure activities of each portion of the SWLF no later than 30 days after the date on which the SWLF receives the known final receipt of wastes or, if the SWLF has remaining capacity and there is a reasonable likelihood that the SWLF will receive additional wastes, no later than one year after the most recent receipt of wastes.

6.1.5.f.A. Extensions beyond the one-year deadline for beginning closure may be granted by the director if the permittee demonstrates that the SWLF has the capacity to receive additional wastes and the permittee has taken and will continue to take all steps necessary to prevent threats to human health and the environment from the unclosed portion of the SWLF.

6.1.5.g. The permittee of all SWLFs must complete closure activities of each SWLF in accordance with the closure plan within 180 days following the beginning of closure as specified in section 6.1.5.f of this rule

6.1.5.g.A. Extensions of the closure period may be granted by the director if the permittee demonstrates that closure will, of necessity, take longer than 180 days and he or she has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed portion of the SWLF.

6.1.6. Final Use at Landfills.

The following activities are prohibited at closed landfills unless specifically approved by the director in writing:

6.1.6.a. Use of the facility for agricultural purposes;

6.1.6.b. Establishment or construction of any buildings; or

6.1.6.c. Excavation of the final cover or any waste materials.

6.1.7. Certification by Registered Professional Engineer.

6.1.7.a. Following closure of each portion of the SWLF, all closure activities must be inspected and approved by a registered professional engineer prior to the application to the ~~chief~~ director for closure approval. The permittee must also notify the director, in writing of this certification, signed by an independent registered professional engineer and approved by the director, verifying that closure has been completed in accordance with the

closure plan. A copy of all related information must be retained in the facility operating record.

6.1.8. Closure Approval.

Upon completion of requirements related to closure, the director will issue a final closure approval. The date of the director's final closure approval ~~shall~~ must be the date of commencement of the post-closure bond liability period.

6.2. Inactive Status.

Upon application to the director, a permittee may request inactive status for a period not to exceed six (6) months. To qualify for inactive status, the permittee ~~shall~~ must:

6.2.1. Intermediate Cover.

Demonstrate that all solid wastes are covered by at least one (1) foot of intermediate cover.

6.2.2. Final Cover.

Demonstrate that all areas where solid waste disposal is complete have been covered with final cover as described in section 6.4.1.a.A of ~~these regulations~~ this rule.

6.2.3. Revegetation.

Demonstrate that all disturbed areas have been seeded in accordance with the revegetation plans specified by section 4.5.6 of ~~these regulations~~ this rule.

6.2.4. Restricted Access.

Restrict access to the area.

6.2.5. Maintenance of Leachate Control.

Demonstrate that leachate collection and treatment will be maintained.

6.2.6. Deed Notation.

Demonstrate that notations have been made in permanent deed records in the County Clerk's Office that the site has been used as a solid waste facility.

6.2.7. Other Assurances.

Provide any other assurance specified by the director.

6.3. Post-Closure Care Requirements.

Following closure of each portion of the SWLF, the permittee must conduct post-closure care as required by the permit. Post-closure care ~~shall~~ must continue for up to thirty (30) ~~ten (10)~~ years after final closure of areas

unless otherwise modified ~~extended~~ by the director and ~~shall~~ must consist of the following:

6.3.1. Monitoring.

Monitoring ~~shall~~ must continue as specified in the monitoring plan required by the permit.

6.3.2. Repair of Settlement.

Any settling of solid waste which occurs up to ten (10) years of the date of final closure, causing ponding of waters in areas of solid waste deposits, ~~shall~~ must be repaired promptly. Such repairs ~~shall~~ must include any necessary regrading, additions of fill material, and revegetation of settled areas, while maintaining the integrity and effectiveness of any final cover, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cover;

6.3.3. Repair of Cover Material.

Any cracking or erosion of cover material which occurs and may cause waters to enter solid waste deposits ~~shall~~ must be repaired immediately. Such repairs ~~shall~~ must include any necessary regrading, additions of cover material, and revegetation to eliminate such cracks or eroded areas.

6.3.4. Site Monitoring.

Further disposal of solid waste at a closed solid waste facility is prohibited. The closed solid waste facility ~~shall~~ must be monitored by the permittee, at a minimum frequency of once each month during the post-closure period, to ensure that solid waste deposits and vandalism do not occur at the closed solid waste facility. Any solid waste deposited at the closed solid waste facility during the post-closure period ~~shall~~ must be promptly removed and disposed of at an approved solid waste facility. Evidence of disease vectors ~~shall~~ must be treated promptly.

6.3.4.a. Maintaining and operating the leachate collection system in accordance with the requirements in section 4.5.4.a.

6.3.4.a.A. The director may allow the permittee to stop managing leachate if the permittee demonstrates that leachate no longer poses a threat to human health and the environment;

6.3.4.b. Monitoring the groundwater in accordance with the requirements of section 4.11, and maintaining the groundwater monitoring system, if applicable; and

6.3.4.c. Maintaining and operating the gas monitoring system in accordance with the requirements of section 4.10 of this rule.

6.3.5. **Length of the Post-Closure Care Period** The length of the post-closure care period may be:

6.3.5.a. Decreased by the director if the permittee demonstrates that the reduced period is sufficient to protect human health and the environment and this demonstration is approved by the director; or

6.3.5.b. Increased by the director, if the director determines that the lengthened period is necessary to protect human health and the environment.

6.3.6. **Post-Closure Plan** The permittee of all SWLFs must prepare a written post-closure plan that includes, at a minimum, the following information:

6.3.6.a. A description of the monitoring and maintenance activities required in section 6.3 for each SWLF, and the frequency at which these activities will be performed;

6.3.6.b. Name, address, and telephone number of the person or office to contact about the facility during the post-closure period; and

6.3.6.c. A description of the planned uses of the property during the post-closure period.

6.3.6.c.A. Post-closure use of the property must not disturb the integrity of the final cover, liner(s), or any other components of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements in this rule.

6.3.6.c.B. The director may approve any other disturbance if the permittee demonstrates that disturbance of the final cover, liner or other component of the containment system, including any removal of waste, will not increase the potential threat to human health or the environment.

6.3.7. The permittee must notify the director that a post-closure plan has been prepared and placed in the operating record no later than the effective date of this rule, or by the initial receipt of waste, whichever is later.

6.3.7.a. Following completion of the post-closure care period for each portion of the SWLF, the permittee must notify the director that a certification, signed by an independent registered professional engineer and approved by the director, verifying that post-closure care has been completed in accordance with the post-closure plan, has been placed in the operating record.

6.4. Final Post-Closure Inspection.

6.4.1. If the permittee of a solid waste facility believes that post-closure requirements have been met, the permittee may file a request for a final post-closure inspection with the director.

6.4.2. Upon a request for a final post-closure inspection, the director will inspect the facility to verify that final post-closure has been completed as follows:

6.4.2.a. The applicable operating requirements of the Solid Waste Management Act and all other environmental laws of the State of West Virginia, the rules and regulations of the West Virginia ~~Department of Natural resources~~ Division of Environmental Protection, all terms and conditions of the facility permit(s), including the approved closure plan, and all orders issued by the ~~chief or the~~ director have been complied with.

6.4.2.b. No further remedial action, maintenance, or other activity by the permittee is necessary to continue compliance with the Solid Waste Management Act, all other environmental laws of the State of West Virginia, the rules and regulations of the division ~~promulgated thereunder~~, orders issued by the ~~chief or the~~ director, and the terms and conditions of the permit and the approved closure plan.

6.4.2.c. The facility is not causing, and will not cause, any adverse effects on the environment, and is not causing a nuisance.

6.4.3. Upon a finding by the director that the facility is in compliance with all factors listed in section 6.4 of ~~these regulations~~ this rule, the permittee will be eligible for bond release pursuant to section 6.6 of ~~these regulations~~ this rule.

6.4.4. Upon a finding by the director that the facility is not in compliance with all the factors listed in section 6.4 of ~~these regulations~~ this rule, the director ~~shall~~ will initiate proceedings for bond forfeiture pursuant to section 6.5 of ~~these regulations~~ this rule.

6.5. Bond Forfeiture.

6.5.1. Procedure.

If the director declares a bond or any other form of financial assurance provided by the permittee forfeited, ~~he shall~~ the director will:

6.5.1.a. Send written notification -- to the principal, to the bond surety, and to every county or regional solid waste authority in the area that utilizes the facility -- of the director's ~~his~~ determination to declare the bond forfeit and the reasons for the forfeiture;

6.5.1.b. Advise the principal and surety of the right to appeal to circuit court; and

6.5.1.c. Proceed to collect on the bond as provided by applicable laws for the collection of defaulted bonds or other debts.

6.5.2. Collateral Bonds and other Forms of Financial Assurance.

If the director declares a collateral bond forfeited, ~~he shall~~ the director will pay, or direct the state treasurer to pay, the collateral funds into an appropriate Solid Waste Fund. If upon proper demand and presentation, the banking institution or other person or municipality which issued the collateral refuses to pay the division ~~Department~~ the proceeds of a collateral undertaking such as a certificate of deposit, letter of credit or government negotiable bond, the director ~~shall~~ will take appropriate steps to collect the

proceeds.

6.5.3. Surety Bond.

If the director declares a surety bond forfeited, he or she will ~~shall~~ certify the same to the Office of Attorney General which will proceed to enforce and collect the amount forfeited, which will, upon collection, be paid into an appropriate Solid Waste Fund.

6.5.4. Use of Funds.

Monies received from the forfeiture of bonds, and interest accrued, will be used first to accomplish final closure of, and to take steps necessary and proper to remedy and prevent adverse environmental effects from, the solid waste facilities upon which liability was charged on the bonds. Any monies remaining after such final closure, post-closure and all necessary remedial actions have been accomplished ~~shall~~ must be deposited in the Solid Waste Enforcement Fund that was established pursuant to W. Va. Code §22-15-11(h)(1) ~~20-5F-5a(h)(1)~~.

6.6. Release of Bonds.

6.6.1. Request.

An operator seeking a release of a bond previously submitted to the director must file a written request with the director for release of the bond amount after inspection or after posting a replacement bond in accordance with the provisions of section 3.13 of ~~these regulations~~ this rule.

6.6.2. Application.

The application for bond release must contain the following:

6.6.2.a. The name of the permittee and identification of the facility for which bond release is sought;

6.6.2.b. The total amount of the bond in effect for the facility; and

6.6.2.c. Other information that may be required by the director.

6.6.2.d. The release or forfeiture of a bond by the director does not constitute a waiver or release of other liability provided in law, nor does it abridge or alter rights of action or remedies of a person or municipality now or hereafter existing in equity or under common law or statutory law, both criminal and civil.

6.6.2.e. The director may grant bond releases immediately upon final closure, for facilities other than landfills, if it is clearly demonstrated that further monitoring, restoration, or maintenance is not necessary to protect the public health, safety and welfare, and the environment.

6.7. Preservation of Remedies.

Remedies provided or authorized by law for a violation of applicable federal or state statutes, the regulations or rules promulgated thereunder, orders issued by the ~~chief or the~~ director, or the terms and conditions of permits are expressly preserved. Nothing in ~~these regulations~~ this rule is an exclusive penalty or remedy for such a violation. No action taken under ~~these regulations~~ this rule waives or impairs another remedy or penalty provided in law or equity.

§47-38-7. Open Dumps.

7.1. Prohibitions.

7.1.1. No person may create or operate an open dump.

7.1.2. No person may contribute additional solid waste to an open dump at any time ~~after April 1, 1988~~.

7.1.3. Except as provided in sections 7.1.4 and 7.1.5 of this rule ~~these regulations~~, no landowner may allow an open dump to exist on his or her property unless such open dump is under a compliance schedule approved by the director ~~chief~~.

7.1.4. An open dump operated prior to April 1, 1988 by a landowner or tenant for the disposal of solid waste generated by the landowner or tenant at his or her residence or farm is not deemed to constitute a violation of section 7.1.3 of this rule ~~these regulations~~ if such open dump did not constitute a violation of law on January 1, 1988.

7.1.4.a. After April 1, 1988, no additional solid waste may be contributed to an open dump operated by a landowner or tenant for the disposal of solid waste generated by the landowner or tenant at his or her residence or farm.

7.1.4.b. The landowner or tenant who operated an open dump for the disposal of solid waste generated at his or her residence or farm must, at a minimum, cover the accumulated waste with two (2) feet of topsoil.

7.1.5. An unauthorized dump created by unknown persons is not deemed to constitute a violation of section 7.1.3 of this rule ~~these regulations~~ and the owner of the land on which such dump is located is not liable for unauthorized dumping unless he refuses to cooperate with the division ~~Department~~ in stopping the dumping. Cooperation with the division ~~Department~~ may include, but is not limited to, the following:

7.1.5.a. The posting of signs stating that dumping is illegal;

7.1.5.b. The erection of fencing to surround the accumulated waste;

7.1.5.c. Surveillance of the open dumping areas to determine the identity of contributors to such open dumps;

7.1.5.d. The removal and keeping of certain indications of ownership as contemplated by W. Va. Code §20-7-26(b); or

7.1.5.e. Testimony before a judicial officer regarding the identity of contributors to the dump.

7.1.6. Open burning of solid waste is prohibited.

7.2. Protection of the Environment and the Public.

7.2.1. Any site at which the following protective measures have not been instituted shall be classified as an open dump:

7.2.1.a. Measures must be taken to prevent the discharge of pollutants from the accumulated waste into the waters of the State (e.g., measures to prevent runoff into surface water bodies or the infiltration of leachates to local aquifers);

7.2.1.b. Measures must be taken to impede the access of disease vectors to the accumulated waste (e.g., the application of cover material at appropriate frequencies or other techniques approved in writing by the director ~~chief~~);

7.2.1.c. Measures must be taken to prevent the introduction of hazardous or infectious materials to the accumulated waste;

7.2.1.d. Measures must be taken to reduce the risk of fire in the accumulated waste (e.g., venting measures to reduce the concentration of explosive gases generated by the waste);

7.2.1.e. Measures must be taken to limit public access to the accumulated waste (e.g., the erection of fencing to surround the accumulated waste);

7.2.1.f. Measures must be taken to prevent adverse impacts to area wildlife, particularly with regard to the destruction or adverse modification of habitat critical to any endangered or threatened species of animal or plant; and

7.2.1.g. Any other similar measures specified by the director in division ~~Department~~ policy, ~~or~~ regulation, or rule.

7.3. Schedules of Compliance for Open Dumps.

7.3.1. Schedules of compliance for open dumps will contain a sequence of enforceable actions.

7.3.2. Schedules of compliance for open dumps may not exceed a total time period for all compliance actions of two (2) years from the date of issuance.

7.4. Enforcement.

7.4.1. If the ~~chief or the~~ director has reasonable cause to believe that a potential for environmental or aesthetic degradation or for harm to the health, safety, or welfare of the public exists at any open dump, he or she may require any person responsible for that open dump to conduct such tests or

furnish such information as may be reasonably required to determine whether that dump is or may be causing said degradation or harm.

7.4.2. The division ~~Department~~ may conduct any test deemed necessary by the ~~chief or the~~ director in making an investigation or determination of a potential for environmental or aesthetic degradation or for harm to the health, safety, or welfare of the public exists at any open dump.

7.4.3. The ~~chief or the~~ director may perform, or require a person by order to perform, any and all acts necessary to carry out the provisions of the Act, ~~and these~~ regulations, or rule with regard to an open dump.

7.4.3.a. Any person having an interest which is or may be affected or who is aggrieved by any order of the ~~chief or the~~ director with regard to an open dump may appeal such order to the Environmental Quality ~~Water Resources~~ Board pursuant to the provisions of ~~the~~ W. Va. Code §22B-3-1 et seq. ~~20-5F-7~~.

7.5. Cooperation with the State Division ~~Department~~ of Highways.

7.5.1. Roadway Specifications.

Standards and design specifications for roadways which provide access to municipal solid waste facilities, as promulgated by the commissioner of the West Virginia Division ~~Department~~ of Highways, are hereby incorporated by reference. A municipal solid waste facility permit may be suspended or revoked if the owner or operator fails to comply with such roadway specifications.

7.5.2. Waste-In-Transit Inspections.

The ~~chief~~ director may designate authorized representatives to coordinate with authorized representatives of the commissioner of the West Virginia Division ~~Department~~ of Highways in conducting inspections of solid waste in transit. Such waste-in-transit inspections will be conducted at weigh stations or other designated sites throughout the state pursuant to rules or regulations promulgated by the Division ~~Department~~ of Highways.

7.6. Cooperation with the State Tax and Revenue Division ~~Department~~.

7.6.1. The division ~~Department~~ will cooperate with the State Tax Commissioner in the handling of proceeds received by the State Tax and Revenue Division ~~Department~~ from fees collected pursuant to the Act.

7.7. Cooperation with the State Health Division ~~Department~~.

7.7.1. The division ~~Department~~ will cooperate with the West Virginia Division ~~Department~~ of Health in assessing the potential for contamination of public water supplies from any proposed or approved solid waste facility, open dump, or other property where solid waste is present.

7.8. Cooperation with County and Regional Solid Waste Authorities.

7.8.1. The division ~~Department~~ will provide such technical assistance

concerning the handling and disposal of solid waste to each county and regional solid waste authority as is reasonable and practicable with existing division ~~Department~~ resources and appropriations available for such purposes.

~~APPENDIX B~~

~~Phase II Monitoring Parameters~~

~~Metals~~

~~1. Arsenic~~
~~2. Barium~~
~~3. Cadmium~~
~~4. Chromium~~
~~5. Lead~~
~~6. Mercury~~
~~7. Selenium~~
~~8. Silver~~
~~9. Copper~~

~~Volatile Organic Compounds~~

~~1. Acetone~~
~~2. Acrolein~~
~~3. Acrylonitrile~~
~~4. Benzene~~
~~5. Bromochloromethane~~
~~6. Bromodichloromethane~~
~~7. 4 Bromofluorobenzene~~
~~8. Bromoform~~
~~9. Bromomethane~~
~~10. 2 Butanone (Methyl ethyl ketone)~~
~~11. Carbon disulfide~~
~~12. Carbon tetrachloride~~
~~13. Chlorobenzene~~
~~14. Chlorodibromomethane~~
~~15. Chloroethane~~
~~16. 2 Chloroethylvinyl ether~~
~~17. Chloroform~~
~~18. Chloromethane~~
~~19. Dibromomethane~~
~~20. 1,4 Dichloro 2 butene~~
~~21. Dichlorodifluoromethane~~
~~22. 1,1 Dichloroethane~~
~~23. 1,2 Dichloroethane~~
~~24. 1,1 Dichloroethylene~~
~~25. trans 1,2 Dichloroethene~~
~~26. cis 1,3 Dichloropropene~~
~~27. trans 1,3 Dichloropropene~~
~~28. 1,4 Difluorobenzene~~
~~29. Ethanol~~

~~APPENDIX B (CONT.)~~

~~Volatile Organic Compounds~~

~~30. Ethylbenzene~~
~~31. Ethyl methacrylate~~
~~32. 2 Hexanone~~
~~33. Iodomethane~~
~~34. Methylene chloride~~
~~35. 4 Methyl 2 pentanone~~
~~36. Styrene~~
~~37. 1,1,2,2 Tetrachloroethane~~
~~38. Toluene~~
~~39. 1,1,1 Trichloroethane~~
~~40. 1,1,2 Trichloroethane~~
~~41. Trichloroethylene~~
~~42. Trichlorofluoromethane~~
~~43. 1,2,3 Trichloropropane~~
~~44. Vinyl acetate~~
~~45. Vinyl chloride~~
~~46. Xylenes~~

APPENDIX I

CONSTITUENTS FOR PHASE I DETECTION MONITORING[1]

GROUP A:

Inorganic Constituents:

COMMON NAME[2]	CAS RN[3]
Acidity	(Total)
Aluminum	(Total)
Alkalinity	(Total)
Ammonia Nitrogen	(Total)
Antimony	(Total)
Arsenic	(Total)
Barium	(Total)
Beryllium	(Total)
Bicarbonates	(mg/l)
Boron	(Total)
Cadmium	(Total)
Chlorides	(Total)
Chromium	(Total)
Cobalt	(Total)
COD	(mg/l)
Copper	(Total)
Cyanide (Free)	(Total)
Dissolved Manganese	(Total)
Iron	(Total)
Lead	(Total)
Magnesium	(Total)
Mercury	(Total)
Molybdenum	(Total)
Nickel	(Total)
Nitrate	(Total)
pH	(Std. Units)
Potassium	(Total)
Selenium	(Total)
Silver	(Total)
Sodium	(Total)
Specific Conductivity	(Micro Ohms)
Sulfate	(Total)
TDS	(mg/l)
Thallium	(Total)
TOC	(mg/l)
Total Phenolic Materials	(Total)
TSS	(Total)
Turbidity	(Total)
Vanadium	(Total)
Zinc	(Total)

In addition to the above, the following parameters should be analyzed: Temperature, hardness, (BOD-5day), flouride, hexavalent chromium and calcium.

APPENDIX I CONT'D

GROUP B:

Organic Constituents:

COMMON NAME[2]	CAS RN[3]
Acetone	67-64-1
Acrylonitrile	107-13-1
Benzene	71-43-2
Bromochloromethane	74-97-5
Bromodichloromethane	75-27-4
Bromoform; Tribromomethane	75-25-2
Carbon disulfide	75-15-0
Carbon tetrachloride	56-23-5
Chlorobenzene	108-90-7
Chloroethane; Ethyl chloride	75-00-3
Chloroform; Trichloromethane	67-66-3
Dibromochloromethane; Chlorodibromomethane	124-48-1
1,2-Dibromo-3-chloropropane; DBCP	96-12-8
1,2,-Dibromoethane; Ethylene dibromide; EDB	106-93-4
o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1
p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7
trans-1,4-Dichloro-2-butene	110-57-6
1,1-Dichloroethane; Ethylidene chloride	75-34-3
1,2-Dichlorethanel Ethylene dichloride	107-06-2
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4
cis-1,2-Dichlorethylene; cis-1,2-Dichloroethene	156-59-2
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5
1,2-Dichloropropane; Propylene dichloride	78-87-5
cis-1,3-Dichloropropene	10061-01-5
trans-1,3-Dichloropropene	10061-02-6
Ethylbenzene	100-41-4
2-Hexanone; Methyl butyl ketone	591-78-6
Methyl bromide; Bromomethane	74-83-9
Methyl chloride; Chloromethane	74-87-3
Methylene bromide; Dibromomethane	74-95-3
Methylene chloride; Dichloromethane	75-09-2
Methyl ethyl ketone; MEK; 2-Butanone	78-93-3
Methyl iodide; Iodomethane	74-88-4
4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1
Styrene	100-42-5
1,1,1,2-Tetrachloroethane	630-20-6
1,1,2,2-Tetrachloroethane	79-34-5
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4
Toluene	108-88-3
1,1,1-Trichloroethane; Methychloroform	71-55-6
1,1,2-Trichloroethane	79-00-5
Trichloroethylene; Trichloroethene	79-01-6
Trichlorofluoromethane; CFC-11	75-69-4
1,2,3-Trichloropropane	96-18-4

Vinyl acetate.....108-05-4
Vinyl chloride.....75-01-4
Xylenes.....1330-20-7

[1] This list contains volatile organics for which possible analytical procedures provided in EPA Report SW-846 "Test Methods for Evaluating Solid Waste," third edition, November 1986, as revised December 1987, includes Method 8260; and metals for which SW-846 provides either Method 6010 or a method from the 7000 series of methods.

[2] Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

[3] Chemical Abstracts Service registry number. Where "Total" is entered, all species in the ground water that contain this element are included.

APPENDIX C

Groundwater Monitoring Constituents

Common Name	CAS Number	CAS Index Name
Acenaphthalene	83-32-9	Acenaphthylene, 1,2-dihydro-
Acenaphthylene	208-96-8	Acenaphthylene
Acetone	67-64-1	2-Propanone
Acetophenone	98-86-2	Ethanone, 1-phenyl-
Acetonitrile; Methyl cyanide	75-05-8	Acetonitrile
2-Acetylaminofluorene; 2-AAF	53-96-3	Acetamide, N-9H-fluorene-2-yl
Acrolein	107-02-8	2-Propenal
Acrylonitrile	107-13-1	2-Propenenitrile
Aldrin	309-00-2	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1a,4a,4a,4aB,5a,8a,8aB)
Allyl chloride	107-05-1	1-Propene, 3-chloro-
4-Aminobiphenyl	92-67-1	(1,1'-Biphenyl)-4-amine
Aniline	62-53-3	Benzenamine
Anthracene	120-12-7	Anthracene
Antimony	(Total)	Antimony
Aramite	140-57-8	Sulfurous acid, 2-chloroethyl 2-[4-(1,1-dimethylethyl)-phenoxy]-1-methylethyl ester
Arsenic	(Total)	Arsenic
Barium	(Total)	Barium
Benzene	71-43-2	Benzene
Benzo(a)anthracene; Benzanthracene	56-55-3	Benz(a)anthracene

~~APPENDIX C (Cont.)~~

~~Groundwater Monitoring Constituents~~

~~Common Name~~	~~CAS Number~~	~~CAS Index Name~~
~~Benzo(b)fluoranthene~~	~~205 99 2~~	~~Benz(e)acephenanthrylene~~
~~Benzo(k)fluoranthene~~	~~207 08 9~~	~~Benzo(k)fluoranthene~~
~~Benzo(ghi)perylene~~	~~191 24 2~~	~~Benzo(ghi)perylene~~
~~Benzo(a)pyrene~~	~~50 32 8~~	~~Benzo(a)pyrene~~
~~Benzyl alcohol~~	~~100 51 6~~	~~Benzenemethanol~~
~~Beryllium~~	~~(Total)~~	~~Beryllium~~
~~alpha BHC~~	~~319 84 6~~	~~Cyclohexane, 1,2,3,4,5,6 hexachloro , (1a,2a,3b,4a,5b,6b)~~
~~beta BHC~~	~~319 85 7~~	~~Cyclohexane, 1,2,3,4,5,6 hexachloro , (1a,2b,3a,4b,5a,6b)~~
~~delta BHC~~	~~319 86 8~~	~~Cyclohexane, 1,2,3,4,5,6 hexachloro , (1a,2a,3a,4b,5a,6b)~~
~~gamma BHC; Lindane~~	~~58 89 9~~	~~Cyclohexane, 1,2,3,4,5,6 hexachloro , (1a,2a,3b,4a,5a,6b)~~
~~Bis(2 chloroethoxy) methane~~	~~111 91 1~~	~~Ethane, 1,1' (methylenebis (oxy))bis(2 chloro~~
~~Bis(2 chloroethyl) ether~~	~~111 44 4~~	~~Ethane, 1,1' oxybis(2 chloro~~
~~Bis(2 chloro 1 methylethyl) ether, 2,2, Dichlorodiisopropyl ether~~	~~108 60 1~~	~~Propane, 2,2' oxybis(1 chloro~~
~~Bis(2 ethylhexyl) phthalate~~	~~117 81 7~~	~~1,2 Benzenedicarboxylic acid, bis(2 ethylhexyl) ester~~
~~Bromodichloromethane~~	~~75 27 4~~	~~Methane, bromodichloro~~
~~Bromoform; Tribromo methane~~	~~75 25 2~~	~~Methane, tribromo~~

~~APPENDIX C (CONT.)~~

~~Groundwater Monitoring Constituents~~

~~Common Name~~	~~CAS Number~~	~~CAS Index Name~~
~~4 Bromophenyl phenyl ether~~	~~101 55 3~~	~~Benzene, 1 bromo 4 phenoxy~~
~~Butyl benzyl phthlate; Benzyl butyl phthlate~~	~~85 68 7~~	~~1,2 Benzenedicarboxylic acid, butyl phenylmethyl ester~~
~~Cadmium~~	~~(Total)~~	~~Cadmium~~
~~Carbon disulfide~~	~~75 15 0~~	~~Carbon disulfide~~
~~Carbon tetrachloride~~	~~56 23 5~~	~~Methane, tetrachloro~~
~~Chlordane~~	~~57 74 9~~	~~4,7, Methano 1H indene, 1,2,4,5,6,7,8,8, octachloro-2,3,3a,4,7,7a hexahydro~~
~~p Chloroaniline~~	~~106 47 8~~	~~Benzenamine, 4 chloro~~
~~Chlorobenzene~~	~~108 90 7~~	~~Benzene, chloro~~
~~Chlorobenzilate~~	~~510 15 6~~	~~Benzeneacetic acid, 4 chloro a (4 chlorophenyl) a hydroxy , ethyl ester~~
~~p Chloro m cresol~~	~~59 50 7~~	~~Phenol, 4 chloro 3 methyl~~
~~Chloroethane; Ethyl chloride~~	~~75 00 3~~	~~Ethane, chloro~~
~~Chloroform~~	~~67 66 3~~	~~Methane, trichloro~~
~~2 Chloroanaphthalene~~	~~91 58 7~~	~~Naphthalene, 2 chloro~~
~~2 Chlorophenol~~	~~95 57 8~~	~~Phenol, 2 chloro~~
~~4 Chlorophenyl phenyl ether~~	~~7005 72 3~~	~~Benzene, 1 chloro 4 phenoxy~~
~~Chloroprene~~	~~126 99 8~~	~~1,3 Butadiene, 1 chloro~~
~~Chromium~~	~~(Total)~~	~~Chromium~~
~~Chrysene~~	~~218 01 9~~	~~Chrysene~~

~~APPENDIX C (CONT.)~~

~~Groundwater Monitoring Constituents~~

~~Common Name~~	~~CAS Number~~	~~CAS Index Name~~
~~Cobalt~~	~~(Total)~~	~~Cobalt~~
~~Copper~~	~~(Total)~~	~~Copper~~
~~m Cresol~~	~~108 39 4~~	~~Phenol, 3 methyl~~
~~o Cresol~~	~~95 48 7~~	~~Phenol, 2 methyl~~
~~p Cresol~~	~~106 44 5~~	~~Phenol, 4 methyl~~
~~Cyanide~~	~~57 12 5~~	~~Cyanide~~
~~2,4 Dichlorophenoxy acetic acid; 2,4 D~~	~~94 75 7~~	~~Acetic acid, (2,4 dichloro phenoxy)~~
~~4,4, DDD~~	~~75 54 8~~	~~Benzene, 1,1, (2,2 dichloro ethylidene) bis(4 chloro~~
~~4,4, DDE~~	~~72 55 9~~	~~Benzene, 1,1, (dichloro ethylidene) bis(4 chloro~~
~~4,4, DDT~~	~~50 29 3~~	~~Benzene 1,1, (2,2,2 trichloro ethylidene) bis(4 chloro~~
~~Diallate~~	~~2303 16 4~~	~~Carbamothioic acid, bis(1 methyl ethyl) S (2,3 dichloro 2 propenyl) ester~~
~~Dibenz(a,h)anthracene~~	~~53 70 3~~	~~Dibenz(a,h)anthracene~~
~~Dibenzofuran~~	~~132 64 9~~	~~Dibenzofuran~~
~~Dibromochloromethane; Chlorodibromomethane~~	~~124 48 1~~	~~Methane, dibromochloro~~
~~1,2 Dibromo 3 chloro propane; DBCP~~	~~96 12 8~~	~~Propene, 1,2, dibromo 3 chloro~~
~~1,2 Dibromoethane; Ethylene dibromide~~	~~106 93 4~~	~~Ethane, 1,2 dibromo~~
~~Di n butyl phthalate~~	~~84 74 2~~	~~1,2 Benzenedicarboxylic acid, dibutyl ester~~
~~o Dichlorobenzene~~	~~95 50 1~~	~~Benzene, 1,2 dichloro~~

APPENDIX C (Cont.)

Groundwater Monitoring Constituents

Common Name	CAS Number	CAS Index Name
m Dichlorobenzene	541 73 1	Benzene, 1,3 dichloro
p Dichlorobenzene	106 46 7	Benzene, 1,4 dichloro
3,3' Dichlorobenzidine	91 94 1	(1,1, Diphenyl) 4,4, diamine, 3,3' dichloro
trans 1,4 Dichloro 2 butene	110 57 6	2 Butene, 1.4 dichloro , (E)
Dichlorodifluoromethane	75 71 8	Methane, dichloro
1,1 Dichloroethane	75 34 3	Ethane, 1,1 dichloro
1,2 Dichloroethane; Ethylele dichloride	107 06 2	Ethane, 1,2 dichloro
1,1 Dichloroethylene Vinylidene chloride	75 35 4	Ethene, 1,1 dichloro
trans 1,2, Dichloro ethylene	156 60 5	Ethene, 1,2 dichloro , (E)
2,4 Dichlorophenol	120 83 2	Phenol, 2,4 dichloro
2,6 Dichlorophenol	87 65 0	Phenol, 2,6 dichloro
1,2 Dichloropropane	78 87 5	Propane, 1,2 dichloro
cis 1,3 Dichloro propene	10061 01 5	1 Propene, 1,3 dichloro , (z)
trans 1,3 Dichloro propene	10061 02 6	1 Propene, 1,3 dichloro , (E)
Dieldrin	60 57 1	2,7:3,6 Dimethanonaphth (2,3 b) oxirene, 3,4,5,6,9,9 hexachloro 1a,2,2a,3,6,6a,7,7a octahydro , (1aa,2B,2aa,3B,6B,6aa,7B,7aa)
Diethyl phthalate	84 66 2	1,2 Benzenedicarboxylic acid, diethyl ester

APPENDIX C (Cont.)

Groundwater Monitoring Constituents

Common Name	CAS Number	CAS Index Name
O,O-Diethyl O-2-pyrazinyl phosphorothioate; Thionazin	297-97-2	Phosphorothioic acid, O,O-diethyl O-diethyl O-pyrazinyl ester
Dimethoate	60-51-5	Phosphorodithioic acid, O,O-dimethyl S-(2-(methylamino)-2-oxoethyl) ester
p-(Dimethylamino) azobenzene	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)
7,12-Dimethylbenz(a) anthracene	57-97-6	Benz(a)anthracene, 7,12-dimethyl
3,3'-Dimethylbenzidine	119-93-7	(1,1-Biphenyl)-4,4'-diamine, 3,3'-dimethyl
alpha,alpha-Dimethyl phenethylamine	122-09-8	Benzeneethanamine, a,a-dimethyl
2,4-Dimethylphenol	105-67-9	Phenol, 2,4-dimethyl
Dimethyl phthalate	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester
m-Dinitrobenzene	99-65-0	Benzene, 1,3-dinitro
4,6-Dinitro-o-cresol	534-52-1	Phenol, 2-methyl-4,6-dinitro-
2,4-Dinitrophenol	51-28-5	Phenol, 2,4-dinitro
2,4-Dinitrotoluene	121-14-2	Benzene, 1-methyl-2,4-dinitro-
2,6-Dinitrotoluene	606-20-2	Benzene, 2-methyl-1,3-dinitro-
Dinoseb; 2-sec-Butyl 4,6-dinitrophenol; DNBP	88-85-7	Phenol, 2-(1-methyl-propyl)-4,6-dinitro-
Di-n-octyl phthalate	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester
1,4-Dioxane	123-91-1	1,4-Dioxane
Diphenylamine	122-39-4	Benzenamine, N-phenyl-

~~APPENDIX C (Cont.)~~

~~Groundwater Monitoring Constituents~~

~~Common Name~~	~~CAS Number~~	~~CAS Index Name~~
~~Disulfoton~~	~~298 04 4~~	~~Phosphorodithioic acid, O,O dimethyl S (2 ethylthio) S (2 ethyl) ester~~
~~Endosulfan I~~	~~959 98 8~~	~~6,9 Methano 2,4,3 benzodi oxathiepin, 6,7,8,9,10,10 hexa chloro 1,5,5a,6,9,9a hexahydro , 3 oxide, (3a,5aB,6a,9a,9aB)~~
~~Endosulfan II~~	~~33213 65 9~~	~~6,9 Methano 2,4,3 benzodi oxathiepin, 6,7,8,9,10,10 hexa chloro 1,5,5a,6,9,9a hexahydro , 3 oxide, (3a,5aa,6B,9B,9aa)~~
~~Endosulfan sulfate~~	~~1031 07 8~~	~~6,9 Methano 2,4,3 benzodi oxathiepin, 6,7,8,9,10,10 hexa chloro 1,5,5a,6,9,9a hexahydro , 3,3' dioxide~~
~~Endrin~~	~~72 20 8~~	~~2,7:3,6 Dimethanonaphth(2,3 b) oxirene, 3,4,5,6,9,9 hexachloro 1a,2,2a,3,6,6a,7,7a octahydro , (1aa,2B,2aB,3a,6a,6aB,7B,7aa)~~
~~Endrin aldehyde~~	~~7421 93 4~~	~~1,2,4, Methanocyclopenta(cd) pentalene 5 carboxaldehyde, 2,2a,3,3,4,7 hexachlorodecahydro ,~~ ~~(1a,2B,2aB,4B,4aB,5B,6aB,6bB,7R*)~~
~~Ethylbenzene~~	~~100 41 4~~	~~Benzene, ethyl~~
~~Ethyl methacrylate~~	~~97 63 2~~	~~2 Propenoic acid, 2 methyl , ethyl ester~~
~~Ethyl methanesulfonate~~	~~62 50 0~~	~~Methanesulfonic acid, ethyl ester~~
~~Famphur~~	~~52 85 7~~	~~Phosphorothioic acid, O (4 (dimethylamino) sulfonyl) phenyl) O,O dimethyl ester~~
~~Fluoranthene~~	~~206 44 0~~	~~Fluoranthene~~
~~Fluorene~~	~~86 73 7~~	~~9H Fluorene~~

~~APPENDIX C (Cont.)~~

~~Groundwater Monitoring Constituents~~

~~Common Name~~	~~CAS Number~~	~~CAS Index Name~~
~~Heptachlor~~	~~76 44 8~~	~~4,7 Methano 1H indene, 1,4,5,6,7,8,8 heptachloro 3a,4,7,7a tetrahydro~~
~~Heptachlor epoxide~~	~~1024 57 3~~	~~2,5 Methano 2H indeno(1,2 b)oxirene, 2,3,4 5,6,7,7 heptachloro 1a,1b,5,5a,6,6a hexahydro , (1aa,1bB,2a,5a,5aB,6B,6aa)~~
~~Hexachlorobenzene~~	~~118 74 1~~	~~Benzene, hexachloro~~
~~Hexachlorobutadiene~~	~~87 68 3~~	~~1,3 Butadiene, 1,1,2,3,4,4 hexachloro~~
~~Hexachlorocyclo pentadiene~~	~~77 47 4~~	~~1,3 Cyclopentadiene, 1,2,3,4,5,5 hexchloro~~
~~Hexachloroethane~~	~~67 72 1~~	~~Ethane, hexachloro~~
~~Hexachlorophene~~	~~70 30 4~~	~~Phenol, 2,2, methylenebis 3,4,6 trichloro~~
~~Hexachloropropene~~	~~1888 71 7~~	~~1 Propene, 1,1,2,3,3,3 hexachloro~~
~~2 Hexanone~~	~~591 78 6~~	~~2 Hexanone~~
~~Indeno(1,2,3 cd)pyrene~~	~~193 39 5~~	~~Indeno(1,2,3 cd)pyrene~~
~~Isobutyl alcohol~~	~~78 63 1~~	~~1 Propanol, 2 methyl~~
~~Isodrin~~	~~465 73 6~~	~~1,4,5,8 Dimethanonaphthalene, 1,2,3,4,10,10 hexachloro 1,4,4a,5,8,8a hexahydro , (1a,4a,4aB,5B,8B,8aB)~~
~~Isophorone~~	~~78 59 1~~	~~1 Cyclohexen 1 one, 3,5,5 trimethyl~~
~~Isosafrole~~	~~120 58 1~~	~~1,3 Benzodioxole, 5 (1 propenyl)~~
~~Kepone~~	~~143 50 0~~	~~1,3,4 Methano 2H cyclobuta(cd)pentalen 2 one, 1,1a,3,3a,4,5,5,5a,5b,6 decachlorooctahydro~~

~~APPENDIX C (Cont.)~~

~~Groundwater Monitoring Constituents~~

~~Common Name~~	~~CAS Number~~	~~CAS Index Name~~
~~Lead~~	~~(Total)~~	~~Lead~~
~~Mercury~~	~~(Total)~~	~~Mercury~~
~~Methacrylonitrile~~	~~126-98-7~~	~~2-Propenenitrile, 2-methyl-~~
~~Methapyrilene~~	~~91-80-5~~	~~1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-~~
~~Methoxychlor~~	~~72-43-5~~	~~Benzene, 1,1'-(2,2,2-trichloroethylidene)bis(4-methoxy-~~
~~Methyl bromide; Bromomethane~~	~~74-83-9~~	~~Methane, bromo-~~
~~Methyl chloride; Chloromethane~~	~~74-87-3~~	~~Methane, chloro-~~
~~3-Methylcholanthrene~~	~~56-49-5~~	~~Benz(j)aceanthrylene, 1,2-dihydro-3-methyl-~~
~~Methylene bromide; Dibromomethane~~	~~74-95-3~~	~~Methane, dibromo-~~
~~Methylene chloride; Dichloromethane~~	~~75-09-2~~	~~Methane, dichloro-~~
~~Methyl ethyl ketone; MEK~~	~~78-93-3~~	~~2-Butanone~~
~~Methyl iodide; Iodomethane~~	~~74-88-4~~	~~Methane, iodo-~~
~~Methyl methacrylate~~	~~80-62-6~~	~~2-Propenoic acid, 2-methyl-, methyl ester~~
~~Methyl methanesulfonate~~	~~66-27-3~~	~~Methanesulfonic acid, methyl ester~~
~~2-Methylnaphthalene~~	~~91-57-6~~	~~Naphthalene, 2-methyl-~~
~~Methyl parathion; Parathion methyl~~	~~298-00-0~~	~~Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester~~

~~APPENDIX C (Cont.)~~

~~Groundwater Monitoring Constituents~~

~~Common Name~~	~~CAS Number~~	~~CAS Index Name~~
~~4 Methyl 2 pentanone; Methyl isobutyl ketone~~	~~108 10 1~~	~~2 Pentanone, 4 methyl~~
~~Naphthalene~~	~~91 20 3~~	~~Naphthalene~~
~~1,4 Naphthoquinone~~	~~130 15 4~~	~~1,4 Naphthalenedione~~
~~1 Naphthalamine~~	~~134 32 7~~	~~1 Naphthalenamine~~
~~2 Naphthylamine~~	~~91 59 8~~	~~2 Naphthalenamine~~
~~Nickel~~	~~(Total)~~	~~Nickel~~
~~o Nitroaniline~~	~~88 74 4~~	~~Benzenamine, 2 nitro~~
~~m Nitroaniline~~	~~99 09 2~~	~~Benzenamine, 3 nitro~~
~~p Nitroaniline~~	~~100 01 6~~	~~Benzenamine, 4 nitro~~
~~Nitrobenzene~~	~~98 95 3~~	~~Benzene, nitro~~
~~o Nitrophenol~~	~~88 75 5~~	~~Phenol, 2 nitro~~
~~p Nitrophenol~~	~~100 02 7~~	~~Phenol, 4 nitro~~
~~4 Nitroquinoline l oxide~~	~~56 57 5~~	~~Quinoline, 4 nitro l oxide~~
~~N Nitrosodi n butyl amine~~	~~924 16 3~~	~~1 Butanamine, N butyl N nitroso~~
~~N Nitrosodiethylamine~~	~~55 18 5~~	~~Ethanamine, N ethyl~~
~~N Nitrosodimethylamine~~	~~62 75 9~~	~~Methanamine, N methyl~~
~~N Nitrosodiphenylamine~~	~~86 30 6~~	~~Benzenamine, N nitroso N phenyl~~
~~N Nitrosodipropylamine; Di n propylnitrosamine~~	~~621 64 7~~	~~1 Propanamine, N nitroso N propyl~~
~~N Nitrosomethylethyl amine~~	~~10595 95 6~~	~~Ethanamine, N methyl N nitroso~~
~~N Nitrosomorpholine~~	~~59 89 2~~	~~Morpholine, 4 nitroso~~
~~N Nitrosopiperidine~~	~~100 75 4~~	~~Piperidine, 1 nitroso~~

~~APPENDIX C (Cont.)~~

~~Groundwater Monitoring Constituents~~

~~Common Name~~	~~CAS Number~~	~~CAS Index Name~~
~~N-Nitrosopyrrolidine~~	~~930-55-2~~	~~Pyrrolidine, 1-nitroso-~~
~~5-Nitro-o-toluidine~~	~~99-55-8~~	~~Benzenamine, 2-methyl-5-nitro-~~
~~Parathion~~	~~56-38-2~~	~~Phosphorothioic acid, o,O-diethyl-~~
		~~O-(4-nitrophenyl) ester~~
~~Polychlorinated biphenyls; PCBs~~		~~1,1'-Biphenyl, chloro derivatives~~
~~Polychlorinated dibenzo-p-dioxins; PCDDs~~		~~Dibenzo(b,e)(1,4)dioxin, chloro derivatives~~
~~Polychlorinated dibenzofurans; PCDFs~~		~~Dibenzofuran, chloro derivatives~~
~~Pentachlorobenzene~~	~~608-93-5~~	~~Benzene, pentachloro-~~
~~Pentachloroethane~~	~~76-01-7~~	~~Ethane, pentachloro-~~
~~Pentachloronitrobenzene~~	~~82-68-8~~	~~Benzene, pentachloronitro-~~
~~Pentachlorophenol~~	~~87-86-5~~	~~Phenol, pentachloro-~~
~~Phenacetin~~	~~62-44-2~~	~~Acetamide, N-(4-ethoxyphenyl)-~~
~~Phenanthrene~~	~~85-01-8~~	~~Phenanthrene~~
~~Phenol~~	~~108-95-2~~	~~Phenol~~
~~p-Phenylenediamine~~	~~106-50-3~~	~~1,4-Benzenediamine~~
~~Phorate~~	~~298-02-2~~	~~Phosphorodithioic acid, O,O-diethyl-S-((ethylthio)-methyl) ester~~
~~2-Picoline~~	~~109-06-8~~	~~Pyridine, 2-methyl-~~
~~Pronamide~~	~~23950-58-5~~	~~Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-~~
~~Propionitrile, Ethyl cyanide~~	~~107-12-0~~	~~Propanenitrile~~
~~Pyrene~~	~~129-00-0~~	~~Pyrene~~

~~APPENDIX C (Cont.)~~

~~Groundwater Monitoring Constituents~~

~~Common Name~~	~~CAS Number~~	~~CAS Index Name~~
~~Pyridine~~	~~110-86-1~~	~~Pyridine~~
~~Safrole~~	~~94-59-7~~	~~1,3-Benzodioxole, 5-(2-propenyl)-~~
~~Selenium~~	~~(Total)~~	~~Selenium~~
~~Silver~~	~~(Total)~~	~~Silver~~
~~Silvex; 2,4,5-TP~~	~~93-72-1~~	~~Propanoic acid, 2-(2,4,5-trichlorophenoxy)~~
~~Styrene~~	~~100-42-5~~	~~Benzene, ethenyl-~~
~~Sulfide~~	~~18496-25-8~~	~~Sulfide~~
~~2,4,5-Trichloro-phenoxyacetic acid; 2,4,5-T~~	~~93-76-5~~	~~Acetic acid, (2,4,5-trichlorophenoxy)-~~
~~2,3,7,8-Tetrachloro-dibenzo-p-doxin; 2,3,7,8-TCDD~~	~~1746-01-6~~	~~Dibenzo(b,e)-(1,4)dioxin, 2,3,7,8-tetrachloro-~~
~~1,2,4,5-Tetrachloro-benzene~~	~~95-94-3~~	~~Benzene, 1,2,4,5-tetrachloro-~~
~~1,1,1,2-Tetrachloro-ethane~~	~~630-20-6~~	~~Ethane, 1,1,1,2-tetrachloro-~~
~~1,1,2,2-Tetrachloro-ethane~~	~~79-34-5~~	~~Ethane, 1,1,2,2-tetrachloro-~~
~~Tetrachloroethylene; Perchloroethylene; Tetrachloroethene~~	~~127-18-4~~	~~Ethene, tetrachloro-~~
~~2,3,4,6-Tetrachloro-phenol~~	~~58-90-2~~	~~Phenol, 2,3,4,6-tetrachloro-~~
~~Tetraethyl dithio-pyrophoshate; Sulfotepp~~	~~3689-24-5~~	~~Thiodiphosphoric acid, [(HO)(2)P(S)(2)O], tetraethyl ester~~
~~Thallium~~	~~(Total)~~	~~Thallium~~

~~APPENDIX C (Cont.)~~

~~Groundwater Monitoring Constituents~~

~~Common Name~~	~~CAS Number~~	~~CAS Index Name~~
~~Tin (Total)~~	~~Tin~~	
~~Toluene~~	~~108-88-3~~	~~Benzene, methyl~~
~~o-Toluidine~~	~~95-53-4~~	~~Benzenamine, 2-methyl~~
~~Toxaphene~~	~~8001-35-2~~	~~Toxaphene~~
~~1,2,4-Trichlorobenzene~~	~~120-82-1~~	~~Benzene, 1,2,4-trichloro~~
~~1,1,1-Trichloroethane; Methylchloroform~~	~~71-55-6~~	~~Ethane, 1,1,1-trichloro~~
~~1,1,2-Trichloroethane~~	~~79-00-5~~	~~Ethane, 1,1,2-trichloro~~
~~Trichloroethylene; Trichloroethene~~	~~79-01-6~~	~~Ethene, trichloro~~
~~Trichlorofluoromethane~~	~~75-69-4~~	~~Methane, trichlorofluoro~~
~~2,4,5-Trichlorophenol~~	~~95-95-4~~	~~Phenol, 2,4,5-trichloro~~
~~2,4,6-Trichlorophenol~~	~~88-06-2~~	~~Phenol, 2,4,6-trichloro~~
~~1,2,3-Trichloropropane~~	~~96-18-4~~	~~Propane, 1,2,3-trichloro~~
~~O,O,O-Triethyl phosphorothioate~~	~~126-68-1~~	~~Phosphorothioic acid, O,O,O-triethyl ester~~
~~sym-Trinitrobenzene~~	~~99-35-4~~	~~Benzene, 1,3,5-trinitro~~
~~Vanadium~~	~~(Total)~~	~~Vanadium~~
~~Vinyl acetate~~	~~108-05-4~~	~~Acetic acid, ethenyl ester~~
~~Vinyl chloride~~	~~75-01-4~~	~~Ethene, chloro~~
~~Xylene (total)~~	~~1330-20-7~~	~~Benzene, dimethyl~~
~~zinc~~	~~(Total)~~	~~zinc~~

APPENDIX II
PHASE II ASSESSMENT MONITORING
HAZARDOUS INORGANIC AND ORGANIC CONSTITUENTS[1]

COMMON NAME[2]	CAS RN[3]	CHEMICAL ABSTRACTS SERVICE INDEX NAME[4]	SUGGESTED METHODS[5]	PQL UG/L)[6]
Acenaphthene	83-32-9	Acenaphthylene,1,2-dihydro-	8100	200
			8270	10
Acenaphthylene	208-96-8	Acenaphthylene	8100	200
			8270	10
Acetone	67-64-1	2-Propanone	8260	100
Acetonitrile;.Methyl cyanide	75-05-8	Acetonitrile	8015	100
Acetophenone	98-86-2	Ethanone, 1-phenyl	8270	10
2-Acetylamino fluorene;. 2-AAF	53-96-3	Acetamide,N-9H-fluoren-2-yl-	8270	20
Acrolein	107-02-8	2-Propenal	8030	5
			8260	100
Acrylonitrile	107-13-1	2-Propenenitrile	8030	5
Aldrin	309-00-2	1,4,5,8-Dimethanonaphthalene,	8080	0.05
		1,2,3,4,10,10-hexachloro-	8270	10
		1,4,4a,5,8,8a-hexahydro-		
		(1a,4a,4aB,5a,8a,8aB)-		
Allyl chloride	107-05-1	1-Propene, 3-chloro-	8010	5
			8260	10
4-Aminobiphenyl	92-67-1	{1,1[1]-Biphenyl}-4-amine	8270	20
Anthracene	120-12-7	Anthracene	8100	200
			8270	10
Antimony	(Total)	Antimony	6010	300
			7040	2000
			7041	30
Arsenic	(Total)	Arsenic	6010	500
			7060	10

APPENDIX II CONT'D

Barium	(Total)	Barium	7061	20
			6010	20
Benzene	71-43-2	Benzene	7080	1000
			8020	2
			8021	0.1
Benzo(a)anthracene;Benzathracene	56-55-3	Benz(a)anthracene	8260	5
			8100	200
Benzo(b)fluoranthene	205-99-2	Benz(e)acephenanthrylene	8270	10
			8100	200
Benzo(k)fluoranthene	207-08-9	Benzo(k)fluoranthene	8270	10
			8100	200
Benzo(ghi)perylene	191-24-2	Benzo(ghi)perylene	8270	10
			8100	200
Benzo(a)pyrene	50-32-8	Benzo)a)pyrene	8270	10
			8100	200
Benzyl alcohol	100-51-6	Benzenemethanol	8270	10
Beryllium	Total)	Beryllium	8270	20
			6010	3
			7090	50
			7091	2
alpha-BHC	319-84-6	Cyclohexane, 1,2,3,4,5,6-	8080	0.05
		hexachloro-, (1a,2a,3B,4a,5B,6B)	8270	10
beta-BHC	319-85-7	Cyclohexane, 1,2,3,4,5,6-	8080	0.05
		hexachloro-, (1a,2a,3B,4a,5B,6B)	8270	20
delta-BHC	319-86-8	Cyclohexane, 1,2,3,4,5,6-	8080	0.1
		hexachloro-, (1a,2a,3a,4B,5a,6B)	8270	20
gamma-BHC;Lindane	58-89-9	Cyclohexane, 1,2,3,4,5,6-	8080	0.05
		hexachloro-, (1a,2a,3B,4a, 5a,6B)	8270	20
Bis(2-chloroethoxy)methane	111-91-1	Ethane, 1,1[1]-{methylenebis	8110	5
		(oxy)}bis{2-chloro	8270	20
Bis(2-chloroethyl)ether;	111-44-4	Ethane, 1,1-oxybis{2-chloro-	8110	3

APPENDIX II CONT'D

Dichlor-oethyl ether			8270	10
Bis(2-chloro 1-methylethyl)	108-60-1	Propane, 2,2-oxybis{1-chloro-	8110	10
ether; 2,2[1]-Dichlorodiiso-			8270	10
propyl ether; DCIP See Note 7.				
Bis(2-ethylhexyl)phthalate	117-81-7	1,2-Benzenedicarboxylic acid,	8060	20
		bis(2-ethylhexyl) ester		
Bromochloromethane;	74-97-5	Methane, bromochloro-	8021	0.1
Chloro-bromomethane			8260	5
Bromodichloromethane;	75-27-4	Methane, bromodichloro-	8010	1
Dibromochloromethane			8021	0.2
			8260	5
Bromoform;Tribromomethane	75-25-2	Methane, tribromo	8010	2
			8021	15
			8260	5
4-Bromophenyl.phenyl ether	101-55-3	Benzene, 1-bromo-4-phenoxy	8110	5
			8270	10
Butyl benzyl phthalate; Benzyl	85-68-7	1,2-Benzenedicarboxylic acid,	8060	5
butyl phthalate		butyl phenylmethyl ester	8270	10
Cadmium	(Total)	Cadmium	6010	40
			7130	50
			7131	1
Carbon disulfide	75-15-0	Carbon disulfide	8260	100
Carbon tetrachloride	56-23-5	Methane, tetrachloro-	8010	1
			8021	0.1
			8260	10
Chlordane	See Note 8	4,7-Methano-1H-indene,	8080	0.1
		1,2,4,5,6,7,8,8-octachloro-	8270	50
		2,3,3a,4,7,7a-hexahydro-		
p-Chloroaniline	106-47-8	Benzenamine, 4-chloro	8270	20
Chlorobenzene	108-90-7	Benzene, chloro-	8010	2

APPENDIX II CONT'D

				8020.....2
				8021... 0.1
				8260.....5
Chlorobenzilate	510-15-6	Benzeneacetic acid, 4-chloro-a-(4-chlorophenyl)-a-hydroxyethyl ester		8270.....10
p-Chloro-m-cresol; 4-Chloro-3-methylphenol	59-50-7	Phenol, 4-chloro-3-methyl-		8040.....5
				8270.....20
Chloroethane;Ethyl chloride	75-00-3	Ethane, chloro-		8010.....5
				8021.....1
				8260.....10
Chloroform,Trichloromethane	67-66-3	Methane, trichloro-		8010... 0.5
				8021... 0.2
				8260.....5
2-Chloronaphthalene	91-58-7	Naphthalene, 2-chloro-		8120.....10
				8270.....10
2-Chlorophenol	95-57-8	Phenol, 2-chloro-		8040.....5
				8270.....10
4-Chlorophenyl phenyl ether	7005-72-3	Benzene, 1-chloro-4-phenoxy-		8110.....40
				8270.....10
Chloroprene	126-99-8	1,3-Butadiene, 2-chloro-		8010.....50
				8260.....20
Chromium	(Total)	Chromium		6010.....70
				7190....500
				7191.....10
Chrysene	218-01-9	Chrysene		8100....200
				8270.....10
Cobalt	(Total)	Cobalt		6010.....70
				7200....500
				7201.....10
Copper	(Total)	Copper		6010.....60

APPENDIX II CONT'D

			7210	200
			7211	10
m-Cresol; 3-methylphenol	108-39-4	Phenol, 3-methyl	8270	10
o-Cresol; 2-methylphenol	95-48-7	Phenol, 2-methyl	8270	10
p-Cresol; 4-methylphenol	106-44-5	Phenol, 4-methyl	8270	10
Cyanide	57-12-5	Cyanide	9010	200
2,4-D; 2,4-Dichloro-phenoxyacetic acid	94-75-7	Acetic acid (2,4-dichloro phenoxy)	8150	10
4,4[1]-DDD	72-54-8	Benzene 1,1[1]-(2,2-dichloro-ethylidene)bis{4-chloro-	8080	0.1
			8270	10
4,4[1]-DDE	72-55-9	Benzene 1,1[1]-(dichloro-ethyenylidene)bis{4-chloro-	8080	0.05
			8270	10
4,4[1]--DDT	50-29-3	Benzene 1,1[1]-(trichloro-ethylidene)bis{4-chloromethylethyl)	8080	0.1
			8270	10
Diallate	2303-16-4	Carbamothioic acid, bis(1-methylethyl)-S-(2,3-dichloro-2-propenyl) ester	8270	10
Dibenz{a,h}anthracene	53-70-3	Dibenz{a,h}anthracene	8100	200
			8270	10
Dibenzofuran	132-64-9	Dibenzofuran	8270	10
Dibromochloromethane; Chlorodibromomethane	124-48-1	Methane, dirbromochloro-	8010	1
			8021	0.3
			8260	5
1,2-Dibromo-3-chloropropane;DBCP	96-12-8	Propane, 1,2-dibrome-3-chloro-	8011	0.1
			8021	30
			8260	25
1,2-Dibromoethane; Ethylene dribromide;EDB	106-93-4	Ethane, 1,2-dibromo	8011	0.1
			8021	10
			8260	5
Di-n-butyl phthalate	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester	8060	5
			8270	10

APPENDIX II CONT'D

o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	Benzene, 1,2-dichloro-	8010	2
			8020	5
			8021	0.5
			8120	10
			8260	5
			8270	10
m-Dichlorobenzene; 1,3-Dichlorobenzene	541-73-1	Benzene, 1,3-Dichloro-	8010	2
			8020	5
			8021	0.2
			8120	10
			8260	5
			8270	10
p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	Benzene, 1,4-Dichloro-	8010	2
			8020	5
			8021	0.1
			8120	15
			8260	5
			8270	10
3,3^{1}--Dichlorobenzidine	91-94-1	{1,1^{1}-Biphenyl}-4,4^{1}-diamine, 3,3^{1}--dichloro-	8270	20
trans-1,4-Dichloro-2-butene	110-57-6	2-Butene, 1,4-dichlor-(E)	8260	100
Dichlorodifluoro-methane; CFC 12	75-71-8	Methane, dichlorodifluoro	8021	0.5
			8260	5
1,1-Dichloroethane; Ethyldidene chloride	75-34-3	Ethane, 1,1-dichloro	8010	1
			8021	0.5
			8260	5
1,2-Dichloroethane; Ethylene dichloride	107-06-2	Ethane, 1,1-dichloro,(E)	8010	0.5
			8021	0.3
			8260	5
1,1-Dichloroethy lene;	75-35-4	Ethene, 1,1-dichloro	8010	1

APPENDIX II CONT'D

. 1,1-Dichloroethene; Vinylidene chloride			8021	0.5
cis-1,2-Dichloroethylene;	156-59-2	Ethene, 1,2-dichloro-, (Z)	8260	5
cis-1,2-Dichloroethene			8021	0.2
trans-1,2-Dichloro-	156-60-5	Ethene, 1,2-dichloro-, (E)	8260	5
ethylene; trans-1,2-			8010	1
Dichloroethene			8021	0.5
2,4-Dichlorophenol	120-83-2	Phenol, 2,4-dichloro-	8260	5
			8040	5
2,6-Dichlorophenol	87-65-0	Phenol, 2,6-dichloro-	8270	10
1,2-Dichloropropane;	78-87-5	Propane, 1,2-dichloro-	8270	10
Propylene dichloride			8010	0.5
			8021	0.05
1,3-Dichloropropane;	142-28-9	Propane, 1,3-dichloro-	8260	5
Trimethylene dichloride			8021	0.3
2,2-Dichloropropane;	594-20-7	Propane, 2,2-dichloro-	8260	5
Isopropylidene chloride			8021	0.5
1,1-Dichloropropene	563-58-6	1-Propene, 1,1-dichloro-	8260	15
			8021	0.2
cis-1,3-Dichloropropene	10061-01-5	1-Propene, 1,3-dichloro-(Z)	8260	5
			8010	20
trans-1,3-Dichloro-	10061-02-6	1-Propene, 1,3-dichloro-(E)	8260	10
propene			8010	5
Dieldrin	60-57-1	2,7:3,6-Dimethanonaphth	8260	10
			8080	0.05
		{2,3-b}oxirene, 3,4,5,6,9,9-hexa	8270	10
		chloro-1a,2,2a,3,6,6a,7,7a-octa-		
		hydro-, (1aa,2B,2aa,3B,6B,6aa,		
		7B,7aa)		
Diethyl phthalate	84-66-2	1,2-Benzenedicarboxylic	8060	5
		acid, diethyl ester	8270	10
0,0-Diethyl 0-2-	297-97-2	Phosphorothioic acid,	8141	5

pyrazinyl		0,0-diethyl 0-pyrazinyl ester	8270	20
phosphorothioate; Thionazin				
Dimethoate	60-51-5	Phosphorodithioic acid,	8141	3
		0,0-diethyl,S-{2-(methylamino)	8270	20
		-2-oxoethyl} ester		
p-(Dimethylamino)azobenzene	60-11-7	Benzenamine,N,N-dimethyl-	8270	10
		4-(phenylazo)		
7,12-Dimethylbenz{a}anthracene-	57-97-6	Benz{a}anthracene, 7,12-dimethyl-	8270	10
3,3-Dimethlbenzidine-	119-93-7	{1,1Biphenyl}-4,4-diamine,	8270	10
		3,3-dimethyl-		
2,4-Dimethylphenol;	105-67-9	Phenol, 2,4-dimethyl	8040	5
m-Xylenol			8270	10
Dimethyl phthalate	131-11-3	1,2-Benzenedicarboxylic acid,	8060	5
		dimethyl ester	8270	10
m-Dinitrobenzene	99-65-0	Benzene, 1,3-dinitro-	8270	20
4,6-Dinitro-o-cresol	534-52-1	Phenol, 2-methyl-4,6-dinitro	8040	150
4,6-Dinitro-2-methylphenol			8270	50
2,4-Dinitrophenol;	51-28-5	Phenol, 2,4-dinitro	8040	150
			8270	50
2,4-Dinitroluene	121-14-2	Benzene, 1-methyl-2,4-dinitro-	8090	0.2
			8270	10
2,6-Dinitrotoluene	606-20-2	Benzene, 2-methyl-1,3-dinitro-	8090	0.1
			8270	10
Dinoseb; DNBP; 2-sec-	88-85-7	Phenol, 2-(1-methylpropyl)-	8150	1
Butyl-4,6-dinitrophenol		4,6-dinitro-	8270	20
Di-n-octyl phthalate	117-84-0	1,2-Benzenedicarboxylic acid,	8060	30
		dioctyl ester	8270	10
Diphenylamine	122-39-4	Benezenamine, N-phenyl-	8270	10
Disulfoton	298-04-4	Phosphorodithioic acid,0,0-diethyl	8140	2
		S-{2-(ethylthio)ethyl}.ester	8141	0.5
			8270	10

APPENDIX II CONT'D

Endosulfan I	959-98-8	6,9-Methano-2,4,3-benzodiox-	8080	0.1
		athiepin, 6,7,8,9,10,10-hexachloro	8270	20
		1,5,5a,6,9,9a-hexahydro, 3-oxide		
Endosulfan II	33213-65-9	6,9-Methano-2,4,3-benzodiox-	8080	0.05
		athiepin, 6,7,8,9,10,10-hexachloro	8270	20
		1,5,5a,6,9,9a-hexa-hydro, 3-oxide,		
		(3a,5aa,6B,9B,9aa)-		
Endosulfan sulfate	1031-07-8	6,9-Methano-2,4,3-benzodiox-	8080	0.5
		athiepin, 6,7,8,9,10,10-hexachloro	8270	10
		1,5,5a,6,9,9a-hexa-hydro, 3,		
		3-dioxide.		
Endrin	72-20-8	2,7:3,6-Dimethanonaphth{2,3-b}	8080	0.1
		oxirene,3,4,5,6,9,9-hexachloro-	8270	20
		1a,2,2a,3,6,6a,7,7a- octahydro-,		
		(1aa,2B,2aB,3a,6a,6aB,7B,7aa)-		
Endrin aldehyde	7421-93-4	1,2,4-Methenocyclopenta{cd}	8080	0.2
		pentalene-5- carboxaldehyde,	8270	10
		2,2a,3,3,4,7-hexachlorodec ahydro-,		
		(1a,2B,2aB,4B,4aB,5B,6aB,6bB,7R)		
Ethylbenzene	100-41-4	Benzene, ethyl-	8020	2
			8221	0.05
			8260	5
Ethyl methacrylate	97-63-2	2-Propenoic acid, 2-methyl-,	8015	5
		ethyl ester	8260	10
			8270	10
Ethyl methanesulfonate	62-50-0	Methanesulfonic acid, ethylester	8270	20
Famphur	52-85-7	Phosphorothioic acid, 0-	8270	20
		[4-{(dimethylamino)sulfonyl}		
		phenyl} 0,0-dimethyl ester		
Fluoranthene	206-44-0	Fluoranthene	8100	200
			8270	10

APPENDIX II CONT'D

Fluorene	86-73-7	9-H-Fluorene	8100	200
			8270	10
Heptachlor	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,	8080	0.05
		8,8-heptachloro-3a,4,7,	8270	10
		7a-tetrahydro-		
Heptachlorepoxide	1024-57-3	2,5-Methano-2H-indeno{1,2-b}	8080	1
		oxirene,2,3,4,5,6,7,7-hepta	8270	10
		chloro-1a,1b,5,5a,6,2, 2, hexahydro-		
		(1aa,1bB,2a,5a,5aB,6B,6aa)		
Hexachlorobenzene	118-74-1	Benzene, hexachloro	8120	0.5
			8270	10
Hexachlorobutadiene	87-68-3	1,3-Butadiene, 1,1,2,3,4,	8021	0.5
		4-hexachloro-	8120	5
			8260	10
			8270	10
Hexachlorocyclopentadiene	77-47-4	1,3-Cyclopentadiene, 1,2,3, 4,5,	8120	5
		5-hexachloro-	8270	10
Hexacloroethane	67-72-1	Ethane, hexachloro-	8120	0.5
			8260	10
			8270	10
Hexachloropropene	1888-71-7	1-Propene,1,1,2,3,3,3-hexachloro-	8270	10
2-Hexanone; Methyl butyl ketone	591-78-6	2-Hexanone	8260	50
Indeno(1,2,3-cd)pyrene	193-39-5	Indeno(1,2,3-cd)pyrene	8100	200
			8270	10
Isobutyl alcohol	78-83-1	1-Propanol, 2-methyl-	8015	50
			8240	100
Isodrin	465-73-6	1,4,5,8-Dimethanonaphthalene,	8270	20
		1,2,3,4,10,10-hexachloro-	8260	10
		1,4, 4a,5,8,8a hexahydro-		
		(1a,4a, 4aB,5B,8B,8aB)-		

Isophorone	78-59-1	2-Cyclohexen-1-one,3,5,5 trimethyl	8090	60
			8270	10
Isosafrole	120-58-1	1,3-Benzodioxole, 5-(1-pro-penyl)	8270	10
Kepone	143-50-0	1,3,4-Metheno-2H-cyclobuta{cd} pentalen-2-one,1,1a,3,3a,4,5,5,5a,5b, 6-decachlorooctahydro-	8270	20
Lead	(Total)	Lead	6010	400
			7420	1000
			7421	10
Mercury	(Total)	Mercury	7470	2
Methacrylonitrile	126-98-7	2-Propenenitrile, 2-methyl-	8015	5
			8260	100
Methapyrilene	91-80-5	1,2-Ethanediamine, N,N-dimethyl-N-2-pridinyl-N1/2- thienylmethyl)	8270	100
Methoxychlor	72-43 5	Benzene,1,1-(2,2,2,trichloro- ethylidene) bis{4-methoxy-	8080	2
			8270	10
Methyl bromide; Bromomethane	74-83-9	Methane, bromo-	8010	20
			8021	10
Methyl chloride; Chloromethane	74-87-3	Methane, chloro-	8010	1
			8021	0.3
3-Methylcholan threne	56-49-5	Benz{j}aceanthrylene, 1,2 dihydro-3-methyl-	8270	10
Methyl ethyl.ketone; MEK; 2-Butanone	78-93-3	2-Butanone	8015	10
			8260	100
Methyl iodide;Iodomethane	74-88-4	Methane, iodo-	8010	40
			8260	10
Methyl methacrylate	80-62-6	2-Propenoic acid, 2-methyl ester	8015	2
			8260	30
Methyl methanesulfonate	66-27-3	Methanesulfonic acid, methyl ester	8270	10
2-Methylnaphthalene	91-57-6	Naphthalene, 2-methyl-	8270	10
Methyl parathion;	298-00-0	Phosphorothioic acid, 0,0-dimethyl	8140	0.5

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Parathion methyl	0-(4-nitrophenyl)ester	8141	1
		8270	10
4-Methyl-2-pentanone;	108-10-1	2-Pentanone, 4-methyl	8015	5
Methyl isobutyl ketone			8260	100
Methylene bromide;	74-95-3	Methane, dibromo-	8010	15
Dibromomethane			8021	20
			8260	10
Methylene chloride;	75-09-2	Methane, dichloro-	8010	5
Dichloromethane			8021	0.2
			8260	10
Naphthalene	91-20-3	Naphthalene	8021	0.5
			8100	200
			8260	5
			8270	10
1,4-Naphthoquinone	130-15-4	1,4-Naphthalenedione	8270	10
1-Naphthylamine	134-32-7	1-Naphthalenamine	8270	10
2-Naphthylamine	91-59-8	2-Naphthalenamine	8270	10
Nickel	(Total)	Nickel	6010	150
o-Nitroaniline; 2-Nitroaniline	88-74-4	Benzenamine, 2-nitro-	8040	5
m-Nitroaniline; 3-Nitroanile	99-09-2	Benzenamine, 3-nitro-	8270	50
p-Nitroaniline;	100-01-6	Benzenamine, 4-nitro-	8270	20
4-Nitroaniline				
Nitrobenzene	98-95-3	Benzene, nitro-	8090	40
			8270	10
o-Nitrophenol; 2-Nitrophenol	88-75-5	Phenol, 2-nitro-	8040	5
			8270	10
p-Nitrophenol; 4-Nitrophenol	100-02-7	Phenol, 4-nitro-	8040	10
			8270	50
N-Nitrosodi-n- butylamine	924-16-3	1-Butanamine, N-butyl-N-nitroso-	8270	10
N-Nitrosodiethylamine	55-18-5	Ethanamine, N-ethyl-N-nitroso	8270	20
N-Nitrosodimethylamine	62-75-9	Methanamine, N-methyl-N-nitroso-	8070	2

APPENDIX II CONT'D

N-Nitrosodiphenylamine	86-30-6	Benzenamine, N-nitroso-N-phenyl	8070	5	
N-Nitrosodipro pylamine; N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine	621-64-7	1-Propanamine, N-nitroso-N-propyl	8070	10	
N-Nitrosomethylethalamine	10595-95-6	Ethanamine, N-methyl-N-nitroso-	8270	10	
N-Nitrosopiperidine	100-75-4	Piperidine, 1-nitroso-	8270	20	
N-Nitrosopyr rolidine	930-55-2	Pyrrolidine, 1-nitroso-	8270	40	
5-Nitro-o-to luidine	99-55-8	Benzenamine, 2-methyl-5-nitro-	8270	10	
Parathion	56-38-2	Phosphorothioic acid, 0,0-diethyl 0-(4-nitrophenyl).ester	8141	0.5	
			8270	10	
Pentachlorobenzene	608-93-5	Benzene, pentachloro-	8270	10	
Pentachloronitrobenzene	82-68-8	Benzene, pentachloronitro-	8270	20	
Pentachlorophenol	87-86-5	Phenol, pentachloro-	8040	5	
			8270	50	
Phenacetin	62-44-2	Acetamide, N-(4-ethoxyphenl)	8270	20	
Phenanthrene	85-01-8	Phenanthrene	8100	200	
			8270	10	
Phenol	108-95-2	Phenol	8040	1	
p-Phenylenediamine	106-50-3	1,4-Benzenediamine	8270	10	
Phorate	298-02-2	Phosphorodithioic acid,0,0-diethyl S-{ethylthio)methyl}ester	8140	2	
			8141	0.5	
			8270	10	
Polychlorinated biphenyls; PCBs; Aroclors	See Note 9	1,1-Biphenyl, chloro derivatives	8080	50	
			8270	200	
Pronamide	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-	8270	10	
Propionitrile; Ethyl cyanide	107-12-0	Propanenitrile	8015	60	
			8260	150	
Pyrene	129-00-0	Pyrene	8100	200	
			8270	10	
Safrole	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)	8270	10	

APPENDIX II CONT'D

Selenium	(Total)	Selenium	6010	750
			7740	20
			7741	20
Silver	(Total)	Silver	6010	70
			7760	100
			7761	10
Silvex 2,4,5-TP	93-72-1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-	8150	2
Styrene	100-42-5	Benzene, ethenyl-	8020	1
			8021	0.1
			8260	10
Sulfide	18496-25-8	Sulfide	9030	4000
2,4,5-T; 2,4,5-Trichlorophen oxyacetic acid	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-	8150	2
1,2,4,5-Tetrachlorobenzene	95-94-3	Benzene, 1,2,4,5-tetrachloro-	8270	10
1,1,1,2-Tetrachloroethane	630-20-6	Ethene, 1,1,1,2-tetrachloro-	8010	5
			8021	0.05
			8260	5
1,1,2,2-Tetrachloroethane	79-34-5	Ethane, 1,1,2,2-tetrachloro-	8010	0.5
			8021	0.1
			8260	5
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	Ethane, tetrachloro-	8010	0.5
			8021	0.5
			8260	5
2,3,4,6-Tetrachlorophenol	58-90-2	Phenol, 2,3,4,6-tetrachloro-	8270	10
Thallium	(Total)	Thallium	6010	400
			7840	1000
			7841	10
Tin	(Total)	Tin	6010	40
Toluene	108-88-3	Benzene, methyl-	8020	2
			8021	0.1

APPENDIX II CONT'D

				8260.....5
o-Toluidine	95-53-4	Benzenamine, 2-mehtyl-	8270	10
Toxaphene	See Note 10	Toxaphene	8080	2
1,2,4-Trichlorobenzene	120-82-1	Benzene, 1,2,4-trichloro-	8021	0.3
			8120	0.5
			8260	10
			8270	10
1,1,1-Trichloroethane; Methylchloroform	71-55-6	Ethane, 1,1,1-trichloro-	8010 8021	0.3 0.3
			8260	5
1,1,2-Trichlorethane	79-00-5	Ethane, 1,1,2-trichloro-	8010	0.2
			8260	5
Trichloroethylene; Trichloroethene	79-01-6	Ethene, trichloro-	8010 8021	1 0.2
			8260	5
Trichlorofluoro-methane; CFC-11	75-69-4	Methane, trichlorofluoro-	8010 8021	10 0.3
			8260	5
2,4,5-Trichlorophenol	95-95-4	Phenol, 2,4,5-trichloro-	8270	10
2,4,6-Trichlorophenol	88-06-2	Phenol, 2,4,6-trichloro-	8040	5
			8270	10
1,2,3-Trichloropropane	96-18-4	Propane, 1,2,3-trichloro-	8010	10
			8021	5
			8260	15
0,0,0-Triethyl phosphorothioate	126-68-1	Phosphorothioic acid, 0,0,0-triethylester	8270	10
sym-Trinitrobenzene	99-35-4	Benzene, 1,3,5-trinitro-	8270	10
Vanadium	(Total)	Vanadium	6010	80
			7910	2000
			7911	40
Vinyl acetate	108-05-4	Acetic acid, ethenyl ester	8260	50

APPENDIX II CONT'D

Vinyl chloride;	75-01-4	Ethene, chloro-	8010	2
		Chloroethene	8021	0.4
			8260	10
Xylene (total)	See Note 11	Benzene, dimethyl-	8020	5
			8021	0.2
			8260	5
Zinc	(Total)	Zinc	6010	20
			7950	50
			7951	0.5

Notes

1 The regulatory requirements pertain only to the list of substances; the right hand columns (methods and POL are given for informational purposes only. See also footnotes 5 and 6.

2 Common names are widely used in governmental regulations, scientific publications, and commerce; synonyms sxist for many chemicals.

3 Chemical Abstract Service registry number. Where "Total" is entered, allspecies in the ground water that contain this element are included.

4.CAS index are those used in the 9th Collective Index.

5 Suggested Methods refer to analytical procedure numbers used in EPA Report SW-846 "Test Methods for Evaluating Solid Waste," third edition, November 1986, as revised, December 1987. Analytical details can be gouns in SW-846 and in documentation on file at the Agency. Caution: The methods listed arerepresentative SW-846 procedures and may notalways be the mosr suitable method(s)for monitoring an analyte under the regulations.

6 Practical Quantitation Limits (POLs) are the lowest concentrations of analytesin gound waters that can be reliably determined within specified limits of precision and accuracy

by the indicated methods under routine laboratory operating conditions. The POL values listed are generally stated to one significant figure. POLs are based on 5 ml samples for volatile organics and 1 liter samples for semivolatile organics. Caution: The POL valuesin many cases are based only on a general estimate for the method and not on a determination for individual compounds; POLs are not part of the regulation.

7 This substance is often called Bis(2-chloroisopropyl) ether, the name Chemical Abstracts Service applies to its noncommercial isomer, Propane, 2,2"-oxybis[2-chloro-(CAS RN 39638-32-9).

8 Chlordane: This entry includes alpha-chlordane (CAS RN 5103-71-9), beta-chlordane (CAS RN 5103-74-2), gamma-chlordane (CAS RN 5566-34-7), and constituents of chlordane (CAS RN 57-74-9 and CAS RN 12789-03-6). POLshown is for technical chlordane. POLs of specific isomers are about 20 ug/l by method 8270.

9 Polychlorinated biphenyls (CAS RN 1336-36-3); this category contains congener chemicals, including constituents of Aroclor 1016 (CAS RN 12676-74-11-2), Aroclor 1221 (CAS RN 11104-28-2), Aroclor 1232 (CAS RN 11141-16-5), Aroclor 1242 (CAS RN 53469-21-9), Aroclor 1248 (CAS RN 12672-29-6), Aroclor 1254 (CAS RN 11097-69-1), and Aroclor 1260 (CAS RN 11096-82-5). The POL shown is an average value for PCB congeners.

10 Toxaphene: This entry includes congener chemicals contained in technical toxaphene (CAS RN 8001-35-2), i.e., chlorinated camphene.

11 Xylene (total): This entry includes o-xylene (CAS RN 96-47-6), m-xylene (CAS RN 108-38-3), p-xylene (CAS RN 106-42-3), and unspecified xylenes (dimethylbenzenes) (CAS RN 1330-20-7). POLs for method 8021 are 0.2 for o-xylene and 0.1 for m- or p-xylene. The POL for m-xylene is 2.0 ug/L by method 8020 or 8260.

APPENDIX III

MAXIMUM CONTAMINANT LEVELS (MCLs)
(PROMULGATED UNDER THE SAFE DRINKING WATER ACT)

Chemical	CAS No.	MCL (mg/l)
Arsenic	7440-38-2	0.05
Barium	7440-39-3	1.0
Benzene	71-343-2	0.005
Cadmium	7440-43-9	0.01
Carbon tetrachloride	56-23-5	0.005
Chromium (hexavalent)	7440-47-3	0.05
2,4-Dichlorophenoxy acetic acid	94-75-7	0.1
1,4-Dichlorobenzene	106-46-7	0.075
1,2-Dichloroethane	107-06-2	0.005
1,1-Dichloroethylene	75-35-4	0.007
Endrin	75-20-8	0.0002
Fluoride	7	4.0
Lindane	58-89-9	0.004
Lead	7439-92-1	0.05
Mercury	7439-97-6	0.002
Methoxychlor	72-43-5	0.1
Nitrate		10.0
Selenium	7782-49-2	0.01
Silver	7440-22-4	0.05
Toxaphene	8001-35-2	0.005
1,1,1-Trichloroethane	71-55-6	0.2
Trichloroethylene	79-01-6	0.005
2,4,5-Trichlorophenoxy acetic acid	93-76-5	0.01
Vinyl chloride	75-01-4	0.002

Appendix ~~A~~ IV

Schedule of Solid Waste Facility Permit Application Fees

Type of Solid Waste Facility	Application Fee
Class A Solid Waste Facility	$7,500.00
Class B Solid Waste Facility	$5,000.00
Class C Solid Waste Facility	$3,000.00
Class D1 Solid Waste Facility	$3,000.00
Class D ~~2~~ Solid Waste Facility	$250.00
~~Class D3 Solid Waste Facility~~	~~$0.00~~
Class E Solid Waste Facility	(Reserved)
Class F Solid Waste Facility	$5,000.00
Non-Disposal Solid Waste Facility	$2,500.00
Renewal of Permit	$1,000.00
Solid Waste Facility Closure	$2,500.00
Modification to Approved Solid Waste Facility	$500.00
Background Investigation of Prospective Permittees	$1,000.00*

* Fee for each person listed in the disclosure statement required.