

QUESTIONNAIRE

(Please include a copy of this form with each filing of your rule: Notice of Public Hearing or Comment Period; Proposed Rule, and if needed, Emergency and Modified Rule.)

DATE: 08/01/03

TO: LEGISLATIVE RULE-MAKING REVIEW COMMITTEE

FROM: (Agency Name, Address & Phone No.) WV Department of Environmental Protection

Division of Water & Waste Management
1356 Hansford Street
Charleston, WV 25301

LEGISLATIVE RULE TITLE: Solid Waste Management Rule (33CSR1)

1. Authorizing statute(s) citation §§22-15-5; 8(e); 10; 12; 13 & 14

2. a. Date filed in State Register with Notice of Hearing or Public Comment Period:
6/11/03

b. What other notice, including advertising, did you give of the hearing?
The Charleston Gazette, Friday, June 13, 2003
The Charleston Daily Mail, Friday, June 13, 2003

c. Date of Public Hearing(s) *or* Public Comment Period ended:
July 31, 2003

d. Attach list of persons who appeared at hearing, comments received, amendments, reasons for amendments.

Attached X No comments received _____

- e. Date you filed in State Register the agency approved proposed Legislative Rule following public hearing: (be exact)

August 1, 2003

- f. Name, title, address and phone/fax/e-mail numbers of agency person(s) to receive all *written correspondence* regarding this rule: (Please type)

H. Michael Dorsey, Assistant Director

1356 Hansford Street
Charleston, WV 25301

Phone: 304-558-5989

FAX: 304-558-0256

- g. **IF DIFFERENT FROM ITEM 'f'**, please give Name, title, address and phone number(s) of agency person(s) who wrote and/or has responsibility for the contents of this rule: (Please type)

Sudhir Patel, Permitting Supervisor:

1356 Hansford St., Charleston, WV 25301; 304-558-5350

Natalie Hardman, ERS II

1356 Hansford St., Charleston, WV 25301; 304-558-5350

Larry Atha, ERS III

1356 Hansford St., Charleston, WV 25301; 304-558-5350

3. If the statute under which you promulgated the submitted rules requires certain findings and determinations to be made as a condition precedent to their promulgation: N/A

- a. Give the date upon which you filed in the State Register a notice of the time and place of a hearing for the taking of evidence and a general description of the issues to be decided.

b. Date of hearing or comment period:

c. On what date did you file in the State Register the findings and determinations required together with the reasons therefor?

d. Attach findings and determinations and reasons:

Attached

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BRIEFING DOCUMENT

Rule Title: 33CSR1- "Solid Waste Management Rule"

A. AUTHORITY: W.Va. Code §22-15-5; 22-15-8(e); 22-15-10; 22-15-12; 22-15-13; and 22-15-14.

B. SUMMARY OF RULE:

This rule establishes requirements for the siting (including location standards), financial assurance, installation, establishment, construction, design, groundwater monitoring, modification, operation, permitting, closure and post-closure care of any solid waste facility and adopts national standards for solid waste regulatory requirements promulgated by the United States Environmental Protection Agency (U.S. EPA) pursuant to Subtitle D as reflected in 40 CFR Part 258. Any person who owns or operates a solid waste facility or who is responsible for the processing, composting, commercial recycling, transfer or disposal of solid waste, except for certain exempt recycling facilities, is subject to this rule.

This rule is proposed to be amended for clarity, but in addition, specific changes have been made to the definitions, revised to reflect the new DEP cabinet organization; to clarify DEP's legal position on transfer stations; to separate and clarify Class D and D-1 landfills.

Other significant revisions are proposed: to further identify specific acts of the illegal disposal of solid waste; to allow the secretary to terminate permits when an operator chooses not to construct or continue the operation of a permitted solid waste facility; to allow the DEP to recoup the costs associated with background investigations; to clarify landfill design criteria for channel diversions, sediment control, leachate collection and transportation, and gas management systems; to incorporate major changes in the Class D permit and registration requirements made in 2001; to require timely reporting of accidents that the DEP might wish to monitor and allow the DEP to require submission of information in standardized forms and in paper or electronic media; to change "Sewage Sludge" to "Sludges" to bring the rules into conformance with current agency practice; to clarify provisions related to "free day"; to eliminate obsolete, outdated provisions, relating to permanently closed criteria and make provisions for gas management systems during permanent closure.

C. STATEMENT OF CIRCUMSTANCES WHICH REQUIRE RULE:

Revisions to the rule include general updates required to reflect new or revised changes in various solid waste programs.

D. FEDERAL COUNTERPART REGULATIONS - INCORPORATION BY REFERENCE/DETERMINATION OF STRINGENCY:

No federal counterpart to this proposed rule exists. Therefore, no determination of stringency is required.

E. CONSTITUTIONAL TAKINGS DETERMINATION:

In accordance with W.Va. Code §§22-1A-1 and 3(c), the Secretary has determined that this rule will not result in taking of private property within the meaning of the Constitutions of West Virginia and the United States of America.

F. CONSULTATION WITH THE ENVIRONMENTAL PROTECTION ADVISORY COUNCIL:

At its June 3, 2003 meeting, the Environmental Protection Advisory Council reviewed and discussed this proposed rule. The Council's comments are contained in the attached minutes.

APPENDIX B

FISCAL NOTE FOR PROPOSED RULES

Rule Title: Title 33 Series 1

Type of Rule: Legislative Interpretive Procedural

Agency: WV Department of Environmental Protection
Division of Water and Waste Management

Address: 1356 Hansford Street
Charleston, WV 25301-1401

1. Effect of Proposed Rule

	ANNUAL FISCAL YEAR				
	INCREASE	DECREASE	CURRENT	NEXT	THEREAFTER
ESTIMATED TOTAL COST	\$0	\$0	\$0	\$0	\$0
PERSONAL SERVICES					
CURRENT EXPENSE					
REPAIRS & ALTERATIONS					
EQUIPMENT					
OTHER					

2. Explanation of above estimates:

Most changes to the rule are clarifications or technical corrections. These amendments are not projected to require additional operation expenses above the current level.

3. Objectives of these rules:


The objective of these changes are to clarify certain sections, make technical corrections and to make our state rules consistent with federal rules and guidelines.

4. Explanation of Overall Economic Impact of Proposed Rule:

- A. **Economic Impact on State Government:**
Not anticipated to be appreciable
- B. **Economic Impact on Political Subdivisions; Specific Industries; Specific Groups of Citizens:**
There may be additional economic impact in certain cases due to new language of Background investigation procedure.
- C. **Economic Impact on Citizens/Public at Large:**
Not anticipated to be appreciable.

Date: 07-31-03

Signature of Agency Head or Authorized Representative:



FILED

TITLE 33
 LEGISLATIVE RULE
 DIVISION DEPARTMENT OF ENVIRONMENTAL PROTECTION - 1 A II: 2b
 OFFICE DIVISION OF WATER & WASTE MANAGEMENT

OFFICE WEST VIRGINIA
 SECRETARY OF STATE

SERIES 1

SOLID WASTE MANAGEMENT RULE

§33-1-1. General.

1.1. Scope. -- This legislative rule establishes requirements for the siting (including location standards), financial assurance, installation, establishment, construction, design, groundwater monitoring, modification, operation, permitting, 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 §22-15-1 et seq. This rule applies to any person who owns or operates a solid waste facility or who is responsible for the processing, composting, commercial 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.a. Applicability.

1.1.a.1. Permittees or applicants of solid waste landfills (SWLFs), or portions thereof, that stopped receiving waste before June 2, 1996 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 May 1, 1990 unless permit requirements are otherwise required by the director Secretary.

1.1.a.2. Permittees of existing SWLFs, or portions thereof, that initiate, or continue receiving waste after June 2, 1996 must comply with the terms and conditions of their existing or renewed solid waste permit, order, and additionally all effective laws, rules and regulations in place, unless said permit is modified by the director Secretary to include the requirements of this rule, or unless permit requirements are otherwise modified by the director Secretary.

1.1.a.3. 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 Secretary.

1.1.a.4. The applicability requirements of this paragraph do not apply only to existing solid waste nondisposal landfill solid waste facilities. These All other facilities must continue to comply with their existing permit and this rule, W. Va. Code §§22-15-1 et seq., 22-12-1 et seq. and 22-11-1 et seq. as applicable, until such time as the permit is subject to renewal, modification or other similar permitting function. New "nondisposal" facility Applicants of facilities that are not landfills must apply for permits as required by, and in compliance with, this rule.

1.1.a.5. Where As applicable, all solid waste facilities shall must comply with W. Va. Code §22-12-1 et sec. seq., and the rules promulgated thereunder.

1.2. Authority. -- W. Va. Code §§22-15-5, 22-15-8(e), 22-15-10, 22-15-12, 22-15-13, and 22-15-14.

1.3. Filing Date. -- April 30, 1999.

1.4. Effective Date. -- April 30, 1999.

1.5. Amendment of Former Rules. -- This legislative rule amends 33CSR1, the "Solid Waste Management Rule" which was filed April 30, 1999, and which became as effective on June 2, 1996. April 30, 1999.

1.6. Lawful Disposal of Solid Waste Required. -- Solid waste must be disposed, processed, stored, transferred, or recycled only at permitted solid waste facilities as described in this rule, and in compliance with W.Va. Code §22C-4-10.

1.6.a The discharge, deposit, injection, dumping, spilling, leaking burning, burying, or otherwise placing of any solid waste or leachate 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 is prohibited, unless specifically authorized by a permit or permits from the Department.

1.6.b. Solid waste landfill facilities or activities failing to satisfy this subsection 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 W. Va. Code §22-15-15.

1.6.c. Solid waste may not be disposed of in a dumpster in violation of W. Va. Code §61-3-53.

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

§33-1-2. 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 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, 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. "Anomalous Event" means an accidental, inadvertent, involuntary, unanticipated, unexpected, uncontrolled, unintentional, or unplanned event, which has an adverse effect upon th operation of the landfill or the environment.

~~2-6:~~ 2.7. "Applicant" means the person applying for a commercial or noncommercial 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~~Secretary specifies, including the following: Spouses, parents and children and siblings.

~~2-7:~~ 2.8. "Approved Solid Waste Facility" means a solid waste facility or practice which has a valid permit under the Act.

~~2-8:~~ 2.9. "Aquifer" means a geological formation, group of formations, or portion of a formation capable of yielding significant quantities of ground-water to wells or springs.

~~2-9:~~ 2.10. "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:~~ 2.11. "Asbestos" means the asbestiform varieties of ~~chrysotile (serpentinite) crocidolite (riebeckite) (crocidolite), amosite (cummingtonite-grunerite), anthophyllite, tremolite and actinolite.~~ serpentinite, chrysotile, riebeckite, crocidolite, cummingtonite-grunerite, anthophyllite, and actinolite tremolite.

~~2-11:~~ 2.12. "Background Investigation Disclosure Statement" means a required statement, on a form prescribed by the director ~~director~~ Secretary, filed by any person or persons who ~~are~~ is 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:~~ 2.13. "Back hauling" 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.

2.14. "Best Management Practices" ("BMPs") means schedules of activities, prohibitions, required practices, maintenance and operational procedures, and other waste management practices utilized to prevent or reduce the pollution of waters of the State or other environmental impacts.

~~2-13:~~ 2.15. "Bird Hazard" means an increase in the likelihood of bird/aircraft collisions that may cause damage to the aircraft or injury to its occupants.

~~2-14:~~ 2.16. "Bond" means any performance bond or other form of financial assurance contemplated pursuant to W. Va. Code §22-15-12.

2.15: 2.17. "Bulking Agent" means any material mixed and composted with sewage sludge.

~~2-16:~~ 2.18. "Bulky Goods" means ~~large items of solid waste such as furniture, large automobile parts, water heaters, or other large, discarded appliances or metal products which are introduced to a solid waste landfill for disposal and whose large size precludes, or complicates their handling;~~ means items or materials which cannot be reasonably and conveniently collected during regularly scheduled weekly pickups, including any of the following discarded items: Refrigerators, washing machines, clothes dryers, dishwashers, ovens, stoves, microwave ovens, and other appliances; air conditioners; bicycles; furniture; waste tires off the rim, having a radius of no more than 16.5 inches, from automobiles, from pickup trucks, from motorcycles, from all-terrain vehicles, and from farm tractors; and other items, not included above, that are at least three (3) feet in length, width, or height, or at least fifty (50) pounds in weight. "Bulky goods" do not include: (a) automotive components, parts, or frames that weigh at least two hundred (200) pounds each; (b) automotive parts, such as motors and transmissions, that have a high density; (c) hazardous waste; (d) items that can be easily divided and placed into bags, boxes, or other containers, less than three (3) feet high, long, or wide, that, with contents, weigh less than fifty (50) pounds each; and (e) construction and demolition debris generally.

~~2-17:~~ 2.19. "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:~~ 2.20. "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.

~~2-19:~~ "Chief" means the chief of the Office of Waste Management of the West Virginia Division of Environmental Protection or the

~~chief's authorized representative:~~

~~2.20.~~ 2.21. "Class A Solid Waste Facility" means a commercial solid waste facility which handles an aggregate of between ten thousand (10,000) and thirty thousand (30,000) tons of solid waste per month. Class A facility includes two or more Class B solid waste landfills owned or operated by the same person in the same county, 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.

~~2.21.~~ 2.22. "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 solid waste exceeding an aggregate of ten thousand (10,000) tons per month. Class B 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~~ Secretary may establish by legislative rule proposed in accordance with the provisions of W. Va. Code §29A-1-1 et seq.

~~2.22.~~ 2.23. "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 do not include construction/demolition facilities.

~~2.23.~~ 2.24. "Class D Solid Waste Facility" means any noncommercial solid waste facility for the disposal of only construction/demolition waste in an area no greater than two (2) acres in size and not exceeding the height of the adjoining ground elevation. ~~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:~~

~~2.23.a.~~ 2.25. "Class D-1 Solid Waste Facility" means a commercial or noncommercial solid waste facility for the disposal of only construction/demolition waste other than a Class D solid waste facility permitted pursuant to paragraph 3.16.e.4.

~~2.24.~~ 2.26. "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.

~~2.25.~~ 2.27. "Class F Solid Waste Facility" means any industrial solid waste disposal facility.

~~2.26.~~ 2.28. "Clean Water Act" or "CWA" means the "Federal Water Pollution Control Act," as amended; 33 U.S.C. §1251 et seq.

~~2.27.~~ 2.29. "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 must be calculated on a dry gas basis corrected to seven percent (7%) oxygen.

~~2.28.~~ 2.30. "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 does not include the legitimate beneficial use of coal combustion by-products.

~~2.34.~~ 2.31. "Commercial 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 composting

facility owned and operated by a person for the sole purpose of composting waste created by that person or such persons on a cost sharing or non-profit basis and shall not include land upon which finished or matured compost is applied for use as a soil amendment or conditioner.

~~2.29:~~ 2.32. "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:~~ 2.33. "Commercial Solid Waste" means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential wastes.

~~2.31:~~ 2.34. "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 does not include an approved solid waste facility owned and operated by a person for the sole purpose of the disposal, processing or composting of solid wastes created by that person or such person and other persons on a cost-sharing or nonprofit basis and does not include land upon which reused or recycled materials are legitimately applied for structural fill, road base, mine reclamation, and similar applications.

~~2.32:~~ 2.35. "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 1×10^{-7} cm/sec. The HDPE component must be installed in direct and uniform contact with the compacted soil component.

~~2.33:~~ 2.36. "Composting" means the aerobic, thermophilic decomposition of natural constituents of solid waste to produce a stable, humus-like material.

~~2.35:~~ 2.37. "Construction/Demolition Waste" means waste building materials, packaging, and grubbing waste, resulting from construction, remodeling, repair and demolition operations on houses, commercial and industrial buildings, pavements, including, but not limited to, wood, plaster, ~~metals, asphaltic substances,~~ bricks, blocks and concrete, and other masonry materials, but does not include asbestos-containing materials, household furnishings, burnt debris, material containing lead-based paint, pressure-treated wood, contaminated solid waste, yard waste or waste tires, and other items listed in subdivision 5.4.a. waste.

~~2.36:~~ 2.38. "Cover Material" means soil or other material, approved by the ~~director~~ Secretary and used in a controlled manner to cover solid waste at solid waste disposal facilities.

2.39. "Department " means the West Virginia Department of Environmental Protection.

~~2.38:~~ 2.40. "Disease Vectors" or "Vector" means any rodents, flies, mosquitoes, or other animals, including insects, capable of transmitting disease to humans.

~~2.39:~~ 2.41. "Displacement" means the relative movement of any two sides of a fault measured in any direction.

~~2.40:~~ 2.42. "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.

2.43. "Division" means the Division of Water and Waste Management of the West Virginia Department of Environmental Protection.

~~2.41:~~ "Division " ~~means the West Virginia Division of Environmental Protection or its designee.~~

~~2.42:~~ 2.44. "Endangered or Threatened

Species" means any endangered or threatened species, as defined in ~~50CFR17~~ 50 CFR Part 17, of animal or plant and includes those species listed as endangered or threatened in ~~50CFR17~~ 50 CFR Part 17.

~~2.43:~~ 2.45. "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:~~ 2.46. "Existing SWLF" means any solid waste landfill that is currently depositing solid waste.

~~2.45:~~ 2.47. "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:~~ 2.48. "Floodplain" means the lowland and relatively flat areas adjoining waters of the state that may be inundated by the 100-year flood.

~~2.47:~~ 2.49. "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:~~ 2.50. "Gas Condensate" means the liquid generated as a result of gas recovery process(es) at the SWLF.

2.51. "Generator" means any person or facility whose act or process produces solid waste, or whose act first causes a solid waste to become subject to regulation.

~~2.49:~~ 2.52. "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:~~ 2.53. "Holocene" means the most recent epoch of the Quaternary Period, extending from the end of the Pleistocene Epoch to the present.

~~2.51:~~ 2.54. "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:~~ 2.55. "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.

~~2.53:~~ 2.56. "Incinerator" means an enclosed device using controlled flame combustion to thermally break down solid waste, including refuse-derived fuel, to an ash residue that contains little or no combustible materials.

~~2.54:~~ 2.57. "Industrial Solid Waste" means any solid waste generated by manufacturing, or industrial processes that is not a hazardous waste regulated under subtitle "C" of RCRA. Such wastes may include, but are not limited to, waste resulting from 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.

~~2.55:~~ 2.58. "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.

~~2.56.~~ 2.59. "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:

~~2.56.a.~~ 2.59.a. "Animal Carcasses, Body Parts, Bedding and Related Waste" means contaminated animal carcasses, body parts, and the bedding of animals that are known to have been exposed to infectious agents during research, the production of biologicals, or the testing of pharmaceuticals, or for any other reason.

~~2.56.b.~~ 2.59.b. "Blood and Blood Products" means liquid waste human blood and blood products in a free-flowing or unabsorbed state;

~~2.56.c.~~ 2.59.c. "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.d.~~ 2.59.d. "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.

~~2.56.e.~~ 2.59.e. "Pathological Wastes" means human pathological wastes, including tissues, organs, body parts, and containers of body fluids exclusive of those fixed in formaldehyde or another fixative.

~~2.56.f.~~ 2.59.f. "Sharps" means discarded articles that may cause punctures or cuts and that have been used in animal or human patient care or treatment, or in pharmacies or medical, research, or industrial laboratories, including, but not limited to, hypodermic needles, syringes with attached needles, scalpel blades, lancets and broken glassware.

~~2.56.g.~~ 2.59.g. "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.h.~~ 2.59.h. "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.

~~2.57.~~ 2.60. "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.~~ 2.61. "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.

~~2.59.~~ 2.62. "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.

~~2.60:~~ 2.63. "Landfill" means any solid waste facility or part of one at which solid waste, or its residue after treatment, is intentionally used for disposal on or in the land for the purpose of permanent disposal. 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, or injection well.

~~2.61:~~ 2.64. "Lateral Expansion" means a horizontal expansion of the waste boundaries of an existing SWLF.

~~2.62:~~ 2.65. "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.

~~2.63:~~ 2.66. "Lift" means the vertical thickness of compacted solid waste and the cover material immediately above it.

~~2.64:~~ 2.67. "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.

~~2.65:~~ 2.68. "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:~~ 2.69. "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.

~~2.67:~~ 2.70. "Lower Explosive Limit" ("LEL") means the lowest percent by volume of a mixture

of explosive gases in air that will propagate a flame at twenty-five degrees centigrade (25 degrees C) and atmospheric pressure.

~~2.68:~~ 2.71. "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.

~~2.69:~~ 2.72. "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.

~~2.70:~~ 2.73. "Major Modification" is a modification to an approved permit in which a major change to the permit is to occur as specified in subsection 3.18 of this rule.

~~2.71:~~ 2.74. "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:~~ 2.75. "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:~~ 2.76. "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:~~ 2.77. "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:~~ 2.78. "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:~~ 2.79. "Municipal Solid Waste Incineration" means the burning of any solid waste collected by any municipal or residential solid waste disposal company.

~~2.77:~~ 2.80. "New SWLF" means any solid waste landfill facility that has not received waste prior to the effective date established in subsection 1.4 of this rule.

~~2.78:~~ 2.81. "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:~~ 2.82. "Open Burning" means the combustion of solid waste without:

~~2.80.a:~~ 2.82.a Control of combustion air to maintain adequate temperature for efficient combustion;

~~2.80.b:~~ 2.82.b. Containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion; and

~~2.80.c:~~ 2.82.c. Control of the emission of the combustion products.

~~2.81:~~ 2.83. "Open Dump" means any solid waste disposal which does not have a permit under W. Va. Code §22-15-1 et seq., and is not otherwise authorized by an order of the ~~director~~ Secretary, or is in violation of state law; or where solid waste is disposed in a manner that does not protect the

environment.

~~2.82:~~ 2.84. "Operator" means the person(s) responsible for the overall operation of a solid waste facility or part thereof.

~~2.83:~~ 2.85. "Operating Hours" means the predetermined period of time specified by the facility permit or other such approval by the ~~director~~ Secretary during which activities may be conducted at a solid waste facility. These activities are not limited to the actual process of disposal.

~~2.84:~~ 2.86. "Owner" means the person(s) who owns a solid waste facility or part thereof.

~~2.85:~~ 2.87. "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.

~~2.86:~~ 2.88. "Permittee" means any person holding a permit or who is otherwise authorized to conduct solid waste activities under the Act.

~~2.87:~~ 2.89. "Persistent Violation" means any violation of the Act, this rule, any permit term or condition, or any order of this rule which is identified during two or more consecutive inspections performed by the ~~director~~ Secretary.

~~2.88:~~ 2.90. "Person," or "Persons," means:

~~2.88.a:~~ 2.90.a. 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;

~~2.88.b:~~ 2.90.b. The State of West Virginia;

~~2.88.c:~~ 2.90.c. Any governmental agency, including federal facilities;

~~2.88.d:~~ 2.90.d. 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;

~~2.88.c.~~ 2.90.e. Any partnership, trust, or estate;

~~2.88.f.~~ 2.90.f. Any person or individual;

~~2.88.g.~~ 2.90.g. Any group of persons or individuals acting individually or as a group; or

~~2.88.h.~~ 2.90.h. Any legal entity whatever.

~~2.89.~~ 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.

~~2.90.~~ 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.

~~2.91.~~ 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, floating craft, or system, or landfill leachate collection system from which pollutants are or may be discharged to the waters of the State.

~~2.92.~~ 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.

~~2.93.~~ 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 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.

~~2.94.~~ 2.96. "Publicly-Owned Treatment Works" or "POTW" means any treatment works owned by the state or any political subdivision thereof, any municipality or any other public entity which processes raw, domestic, industrial or municipal sewage by any artificial or natural processes in order to remove or so alter constituents as to render the waste less offensive or dangerous to the public health, comfort or property of any of the inhabitants of this State, before the discharge of the plant effluent into any of the waters of this State, and which produces sewage sludge.

~~2.95.~~ 2.97. "Q.A./Q.C." means "quality assurance and quality control."

~~2.96.~~ 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.

~~2.97.~~ 2.99. "Receiving Hours" means the period of time designated by the facility solid waste permit, or otherwise approved by the ~~director~~ Secretary within the operating hours that the solid waste facility accepts solid waste for disposal.

~~2.98.~~ 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.

~~2.99.~~ 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 W. Va. Code §§22-15-1 et seq., 22C-4-1 et seq., and 20-11-1 et seq.

2.102. Regulated Asbestos-Containing Material is defined as friable asbestos material; Category I nonfriable asbestos-containing material that has become friable; Category I nonfriable asbestos-containing material that has become friable; Category I nonfriable asbestos-containing material that will be or has been subjected to sanding, grinding, cutting or abrading; and Category II nonfriable asbestos-containing material that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

~~2.100. 2.103. "Regulated Hazardous Waste" means a solid waste that is a hazardous waste, as defined in 40CFR261.3 40 CFR §261.3, that is not excluded from regulation as a hazardous waste under 40CFR261.4(b)40 CFR §261.4(b). or was not generated by a conditionally exempt small quantity generator as defined in 40CFR261.5.~~

~~2.101. 2.104. "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 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.~~

~~2.102. 2.105. "Run-off" means any rainwater, leachate, or other liquid that drains over land from any part of a facility.~~

~~2.103. 2.106. "Run-on" means any rainwater, leachate, or other liquid that drains over land onto~~

any part of a facility.

~~2.104. 2.107. "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.~~

~~2.105. 2.108. "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.~~

~~2.106. 2.109. "Saturated Zone" means that part of the earth's crust in which all voids are filled with water.~~

~~2.107. 2.110. "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.~~

~~2.108. 2.111. "Schedule of Compliance" or "Compliance Schedule" means a list of activities approved or ordered by the directorSecretary, 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, this rule, or permit terms and conditions.~~

2.112. "Secretary" means the Secretary of the West Virginia Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W. Va. Code §22-1-6 or §22-1-8. For the purpose of this rule, the term "Secretary" also means the administrator of the West Virginia's solid waste permit program in the administration of sections 2002 and 4005 of Resource Conservation and Recovery Act (RCRA).

~~2.109:~~ 2.113. "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.

~~2.110:~~ 2.114. "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.

~~2.111:~~ 2.115. "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.

~~2.112:~~ 2.116. "Sewage Sludge Processing Facility" 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 microbial and anaerobic digestion.

~~2.113:~~ 2.117. "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 source, exclusive of the treated effluent from a wastewater treatment plant.

~~2.114:~~ 2.118. "Solid Waste" means any garbage; paper; litter; refuse; cans; bottles; waste processed for the express purpose of incineration; sludge from a waste 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 community activities. The term "solid waste" does not include:

~~2.114.a:~~ 2.118.a. Solid or dissolved materials in sewage;

~~2.114.b:~~ 2.118.b. Solid or dissolved materials in irrigation return flows;

~~2.114.c:~~ 2.118.c. Industrial discharges that are point sources and have permits under W. Va. Code §22-11-1 et seq.; or subject to permit under 33 U.S.C. 1342;

~~2.114.d:~~ 2.118.d. 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;

~~2.114.e:~~ 2.118.e. A hazardous waste either identified or listed under W. Va. Code §22-18-1 et seq. and the rules promulgated thereunder;

~~2.114.f:~~ 2.118.f. 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 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., so long as such placement or disposal is in conformance with a permit issued pursuant to such chapters; and

~~2.114.g:~~ 2.118.g. 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 substitutes for

raw material feedstock.

~~2.115:~~ 2.119. "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.

~~2.116:~~ 2.120. "Solid Waste Disposal Shed" means the a geographical area which the solid waste management board designates ~~and files in the State Register pursuant to as provided in~~ W. Va. Code §22C-3-9 for solid waste management.

~~2.117:~~ 2.121. "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 of this rule.

~~2.118:~~ 2.122. "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, recycling facilities, materials recovery facilities, mixed waste processing facilities, sewage sludge processing facilities, commercial 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. 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.

~~2.119:~~ 2.123. "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 publicly or privately owned landfill may be a new SWLF, an existing SWLF, or a lateral expansion ~~publicly or privately owned.~~

~~2.120:~~ 2.124. "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.

~~2.121.~~ "~~State Water Pollution Control Act~~" means ~~W. Va. Code §22-11-1 et seq.~~

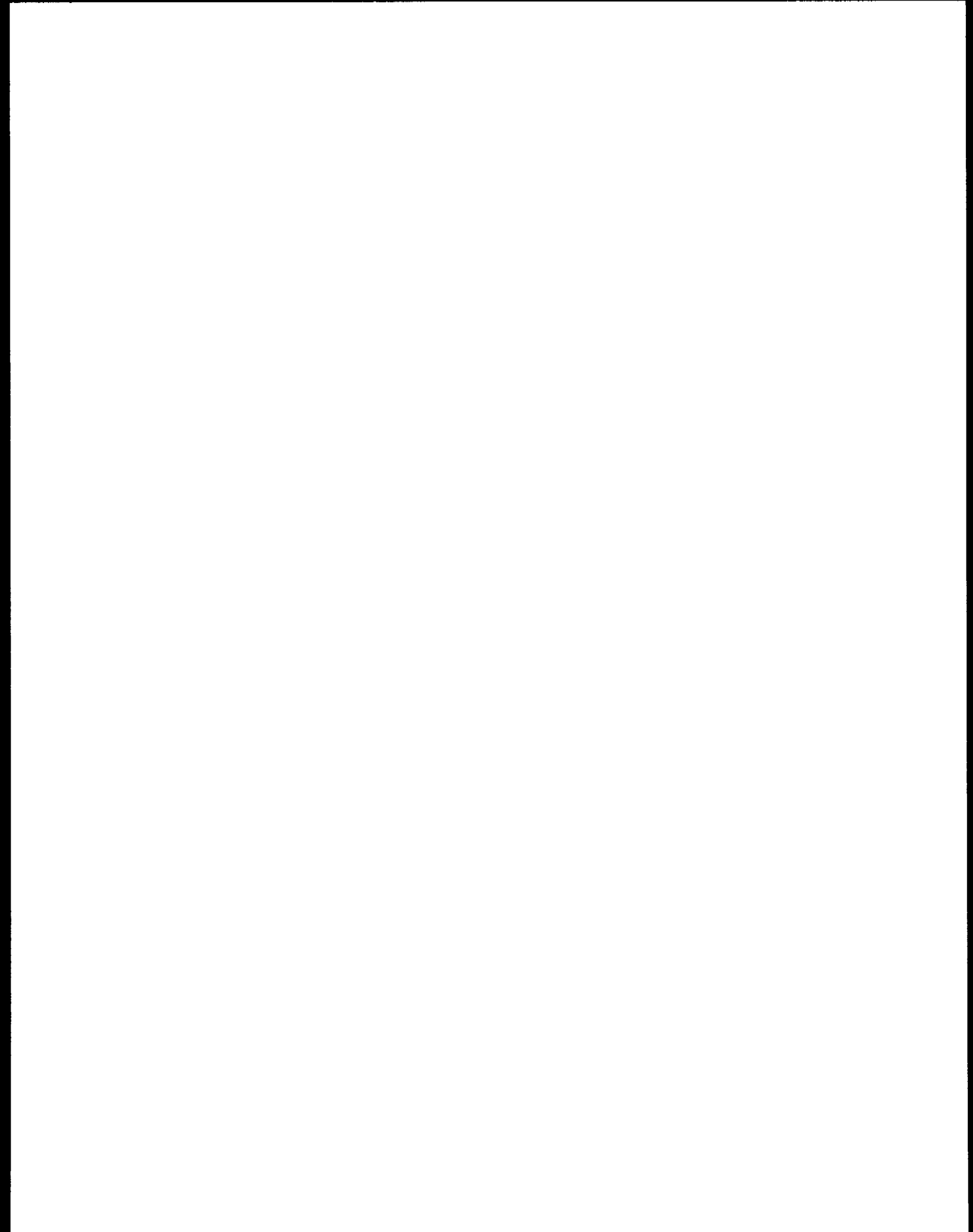
~~2.122:~~ 2.125. "Source-Separated Materials" means materials separated from general solid waste at the point of origin for the purpose of reuse and recycling but does not mean sewage sludge.

2.126. "Staging Area" means an area or facility where solid waste is temporarily stored, sorted and/or processed for transport to a solid waste facility. Staging areas are prohibited unless specifically approved or permitted by the Secretary.

~~2.123:~~ 2.127. "Storage" or "Storage Area" means the interim storage of solid waste, at a permitted or nonpermitted solid waste facility on a temporary basis. Any storage that exceeds one hundred eighty (180) days, without the prior written approval of the ~~director~~Secretary, in such a manner, constitutes illegal disposal of such solid waste (i.e., staging areas).

~~2.124:~~ 2.128. "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.

~~2.125:~~ 2.129. "Structural Fill" means an engineered/designed and controlled



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.

~~2.136.~~ 2.142. "7Q10" means the seven (7) consecutive day drought flow with a ten (10) year return frequency.

~~2.137.~~ 2.143. "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.

§33-1-3. Solid Waste Facility 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.a. Natural Wetlands. -- A significant adverse impact upon natural wetlands, as defined in section 2 of this rule;

3.1.b. 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.c. Surface Water. -- A significant adverse impact upon any surface water;

3.1.d. Groundwater. -- A significant adverse impact upon groundwater quality;

3.1.e. Compliance with other agency requirements.

3.1.e.1. A permittee must comply with any and all applicable federal and state laws, rules, regulations or other requirements. Permittees of SWLFs must not:

3.1.e.1.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 W. Va. Code §22-11-1 et seq., 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 W. Va. Code §22-11-1 et seq., as amended.

3.1.e.1.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 W. Va. Code §22-11-1 et seq., as amended.

3.1.e.1.C. Cause the discharge of a point source of pollution to waters of the State, in violation of surface water quality standards found in §22-11-1 et seq. or any rules or regulations promulgated thereunder; or

3.1.e.1.D. Cause a ~~A~~ violation of the Groundwater Protection Act; W. Va. Code §22-12-1 et seq. or any rules promulgated thereunder.

3.1.f. 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.g. Air Pollution. -- The emission of any air contaminant exceeding the limitations for

those substances as set by the West Virginia ~~Division~~ Department of Environmental Protection, ~~Office~~ Division of Air Quality.

3.2. Location Standards. -- Unless otherwise approved by the ~~director~~ Secretary in writing, a person 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 subsection 3.2 of this rule refer to distances as measured from the edge of the waste management unit boundary of a facility.)

3.2.a. Location Standards for Surface Water.

3.2.a.1. 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.b. 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~~ Secretary (facility drainage or sedimentation control structures are exempt from this distance calculation):

3.2.b.1. Where applicable under section 404 of the Clean Water Act or applicable wetland laws under W. Va. Code §22-11-1 et seq., 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.b.2. The construction and operation of the SWLF must not:

3.2.b.2.A. Cause or contribute to violations of any applicable state water quality standard;

3.2.b.2.B. Violate any applicable W. Va. Code §22-11-1 et seq., and/or other toxic effluent standard or prohibition under section 307 of the

Clean Water Act or as reflected in W. Va. Code §22-11-1 et seq., as amended;

3.2.b.2.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.b.2.D. Violate any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary.

3.2.b.3. 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.b.3.A. Erosion, stability, and migration potential of native wetland soils, muds, and deposits used to support the SWLF;

3.2.b.3.B. Erosion, stability, and migration potential of dredged and fill materials used to support the SWLF;

3.2.b.3.C. The volume and chemical nature of the waste managed in the SWLF;

3.2.b.3.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.b.3.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.b.3.F. Any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected.

3.2.b.3.G. To the extent required under section 404 of the Clean Water Act or applicable

state natural wetlands laws as reflected in W. Va. Code §22-11-1 et seq., 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 paragraph 3.2.b 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.c. Perennial Stream Location Standards -- No SWLF may be located within the watercourse of a perennial stream;

3.2.d. Location Standards for Floodplains.

3.2.d.1. Permittees of new SWLFs, existing SWLFs and lateral expansions located in a 100-year floodplains must demonstrate that the SWLF does not, and will not:

3.2.d.1.A. Restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or

3.2.d.1.B. Result in a washout of solid waste so as to pose a hazard to human health and/or the environment.

3.2.e. 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 highway, interstate, 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.f. Location Standards for Fault Areas.

3.2.f.1. New SWLFs and lateral expansions

must not be located within 200 feet (60 meters) of a fault that has had displacement in Holocene time (i.e., during the last eleven thousand years);

3.2.f.2. Unless the permittee demonstrates to the ~~director~~Secretary 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.g. Location Standards for Airport Safety.

3.2.g.1. 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.g.2. 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~~Secretary.

3.2.g.3. Owners or operators proposing to site new MSWLF units and lateral expansions within a five-mile radius of any airport runway end used by turbojet or piston-type aircraft must notify the affected airport and the Federal Aviation Administration (FAA).

3.2.h. Location Standards for Dwellings.

3.2.h.1. Permittees of new SWLFs, and lateral expansions must not be located 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.i. Location Standards for Wells.

3.2.i.1. 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.j. Location Standards for Unstable Areas.

3.2.j.1. Permittees of new SWLFs, existing SWLFs, and lateral expansions cannot be located within one thousand (1,000) feet of any area considered by the directorSecretary to be unstable 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.j.2. The Permittee must consider the following factors, at a minimum, when determining whether an area is unstable:

3.2.j.2.A. On-site or local soil conditions that may result in significant differential settling;

3.2.j.2.B. On-site or local geologic or geomorphologic features; and

3.2.j.2.C. On-site or local human-made features or events (both surface and subsurface).

3.2.k. Location Standards for Underground Mines.

3.2.k.1. Permittees of new SWLFs, and lateral expansions cannot be located above underground mine workings or within the critical angle of draw of such workings, unless otherwise

approved by the directorSecretary in writing;

3.2.l. 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 directorSecretary in writing.

3.2.m. 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 directorSecretary 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.n. Location Standards for Air Criteria.

3.2.n.1. 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 Division of Air Quality, do not occur.

3.2.n.2. 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 Division of Air Quality, is prohibited at all SWLFs.

3.2.o. Property Line Distance Requirements -- 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 all adjacent property lines;

~~3.2.0~~ 3.2.p. Recordkeeping. -- The permittee must retain a copy of all such demonstrations for location standards that have previously received the written approval of the ~~director~~Secretary pursuant to this subdivision in the facility operating record, as required by subsection 4.4 of this rule.

3.3. Approvable Facilities.

3.3.a. Approvable Solid Waste Facilities. -- Solid waste facilities for which approval may be granted include the following, or any combination thereof:

- 3.3.a.1. Class A Solid Waste Facility;
- 3.3.a.2. Class B Solid Waste Facility;
- 3.3.a.3. Class C Solid Waste Facility;
- 3.3.a.4. Class D Solid Waste Facility;
- 3.3.a.5. Class E Solid Waste Facility;
- 3.3.a.6. Class F Solid Waste Facility;
- 3.3.a.7. Sewage Sludge Processing Facility;
- 3.3.a.8. Yard Waste Composting Facility;
- 3.3.a.9. Mixed Waste Processing Facility; and/or
- 3.3.a.10. Other solid waste facilities approved in writing by the ~~director~~Secretary.

3.4. Pre-Siting Requirements for Commercial Solid Waste Facilities. -- Except those recycling facilities specifically exempted by W. Va. Code §20-11-12, any person wishing to apply for a permit under W. Va. Code §22 -15-1 et seq. must comply with the following:

3.4.a. 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, a person must have complied with the pre-siting requirements of the W. Va. Code §22-15-13 but not limited to the following:

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

3.4.a.1.A. A description of the location ~~or locations~~ at which the proposed facility may be sited;

3.4.a.1.B. A statement of the anticipated size of the proposed facility, in acres; and

3.4.a.1.C. An estimate of the volume, type, and source of solid waste to be handled at the proposed facility.

3.4.a.2. File a pre-siting notice with the ~~director~~Secretary within five (5) days of the publication of the legal advertisement required under paragraph 3.4.a.1 of this rule. The pre-siting notice must be made in writing on forms obtained from the ~~director~~Secretary, which must be signed and verified by the applicant, and must include:

3.4.a.2.A. A certification of publication of the legal advertisement required under paragraph 3.4.a.1 of this rule from a qualified newspaper, as defined in W. Va. Code §59-3-1 et seq. in which such advertisement was published;

3.4.a.2.B. A description of each location at which the proposed facility or facilities may be sited;

3.4.a.2.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.a.2.D. An estimate of the volume, type, and source of solid waste to be handled at the proposed facility;

3.4.a.2.E. The period of time over which the investigative review of the site will be undertaken;

3.4.a.2.F. Other information required by the directorSecretary; and

3.4.a.3. Provide a copy of the pre-siting notice to the appropriate county or regional solid waste authority, county commission and/or other entities established pursuant to W. Va. §22C-4-1 et seq. 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 paragraph 3.4.a.1 of this rule.

3.4.b. The directorSecretary must hold a public hearing on the pre-siting notice in the area potentially affected.

3.4.b.1. The public hearing on the contents of the pre-siting notice must be conducted in accordance with the provisions of subsection 3.23 of this rule.

3.4.b.2. The directorSecretary 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 subdivision 3.4.b of this rule.

3.4.c. 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, regional solid waste authorities within ninety (90) days after their receipt of the pre-siting notice, the directorSecretary 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.c.1. Impacts upon transportation facilities;

3.4.c.2. Impacts upon public water supplies;

3.4.c.3. Impact upon land use patterns;

3.4.c.4. Impacts upon agricultural, commercial and residential real estate values;

3.4.c.5. Impacts upon wildlife;

3.4.c.6. Impacts upon endangered or threatened species of animals or plants;

3.4.c.7. Impacts upon aesthetics;

3.4.c.8. Impacts upon socioeconomic conditions;

3.4.c.9. Impacts upon water resources; and

3.4.c.10. Other impacts as determined by the directorSecretary.

3.5. Facility Permits.

3.5.a. Permit Required. -- A permit must be obtained from the directorSecretary prior to the installation, establishment, construction, modification, operation, or closure of any solid waste facility.

3.5.b. Single Permit. -- Permits issued pursuant to this rule must meet the requirements of W. Va. Code §§22-15-1 et seq. and 22-11-1 et seq., and all associated rules as applicable so that only one permit for any solid waste facility will be issued by the directorSecretary. The W. Va. Code §22-11 portion of that single permit must also meet the

requirements of the "Groundwater Protection Act" promulgated under W. Va. Code §22-12-1 et seq., and any rules promulgated thereunder, as amended.

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

3.5.d. Existing Permits. -- Any person who holds a valid ~~Division~~ Department permit, or modifies or renews such permit to conduct a solid waste activity must, upon notification by the ~~director~~Secretary in writing, submit a request to the ~~director~~Secretary for a minor modification of that permit, in accordance with the provisions of subsection 3.18 of this rule, so that the applicable provisions of this rule can be incorporated into the terms and conditions of the existing permit. The ~~director~~Secretary may only require a minor modification of the facility permit if the statute "Solid Waste Management Act," this rule, or the counterpart federal regulation is modified or amended. The permit modification request must be submitted within ninety (90) days of the date of receipt of the notification of the ~~director~~Secretary that they are required to comply with all requirements of W. Va. Code §22-15-1 et seq., and this rule, as applicable.

3.5.e. 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.a. 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 IV to this rule, as amended.

3.6.b. A fee equal to ten percent (10%) of the application fee listed in Appendix IV to this rule must accompany an 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 must be obtained from the ~~director~~Secretary prior to the installation, establishment, construction, modification, operation, or closure of any solid waste facility. Unless otherwise specified in this rule or on application forms prescribed by the ~~director~~Secretary, all applications for a solid waste facility permit must include the following:

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

3.7.b. Property Rights. -- The application must provide a copy and a narrative description of the legal documents upon which the applicant's legal right to enter and conduct solid waste operations is based within the solid waste facility proposed permit area and whether that right is the subject of pending or current court litigation.

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

3.7.d. Cover Letter. -- The application must include a cover letter detailing the desired Division Department action and/or response.

3.7.e. Table of Contents. -- The application must include a table of contents listing all sections, visuals and attachments of the submittal.

3.7.f. Visuals. -- The application 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, aerial photographs and other attachments must:

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

3.7.f.2. Be of appropriate scale to show all required details in sufficient clarity;

3.7.f.3. Be numbered, referenced in the table of contents and narrative, titled, have a legend of all symbols used, and specify drafting or origination dates;

3.7.f.4. Use uniform horizontal and vertical scales;

3.7.f.5. Contain a north arrow;

3.7.f.6. Use USGS datum as a basis for all elevations;

3.7.f.7. 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.f.8. Show original topography and the grid system on plan sheets showing construction, operation, or closure topography; and

3.7.f.9. Show survey grid location and reference major plan sheets on all cross-sections.

A reduced diagram of a cross-section location plan view map must be included on the sheets with the cross-section.

3.7.g. Quality Assurance and Quality Control Plans. -- The application 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, monitoring well development, and provisions for monitoring within applicable standards.

3.7.g.1. The Q.A./Q.C. plans 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.g.2. The Q.A./Q.C. plans must include a description of the required level of experience and training for the contractor, 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 this rule will be properly implemented; and

3.7.g.3. The Q.A./Q.C. plans 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. procedures must include:

3.7.g.3.A. The frequency of field inspections, field testing, and frequency of sampling for laboratory testing;

3.7.g.3.B. The sampling and field testing procedures and any associated equipment to be utilized;

3.7.g.3.C. The calibration of field testing equipment;

3.7.g.3.D. The frequency of performance audits;

3.7.g.3.E. The sampling size;

3.7.g.3.F. The soils or geotechnical laboratory to be used;

3.7.g.3.G. The laboratory procedures to be utilized;

3.7.g.3.H. The calibration of laboratory equipment;

3.7.g.3.I. The laboratory's Q.A./Q.C. procedures;

3.7.g.3.J. The limits for test failure; and

3.7.g.3.K. A description of the corrective procedures to be used upon test failure;

3.7.g.4. The Q.A./Q.C. plans must include a description of the quality assurance and quality control sampling and analysis procedures. At a minimum, these Q.A./Q.C. procedures must encompass the sampling procedures and analyses of groundwater, surface water, soil, leachate, and gas required under this rule.

3.7.h. Technical Procedures. -- All technical procedures used to investigate a solid waste facility 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 directorSecretary.

3.7.h.1. All technical data submitted in the application 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, an analysis of the data, 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.i. Endangered Species and Historic Sites.

The application must include a letter from the Division of Natural Resources' Section of Wildlife Resources addressing the presence of

any endangered or threatened species of animals or plants in the vicinity of the proposed facility. The application must also include a letter from the West Virginia Division of Culture and History addressing the presence of any historical, scientific, or archaeological areas in the vicinity of the proposed facility.

3.7.j. Bonding and Financial Assurance.

Sufficient bond or other type of financial assurance must be ~~submitted to~~ approved by the Division Department in compliance with the provisions of subsection 3.13 of this rule, and any requirements of the West Virginia Public Service Commission.

3.7.j.1. 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~~Secretary prior to the placement of the estimate in the operating record.

3.7.k. Background Investigation Disclosure Statement. -- The background investigation disclosure statement for a solid waste facility permit 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 facility and must be submitted to the ~~director~~Secretary in compliance with subsection 3.14 of this rule.

3.7.l. Facility Expansion. -- In an application for an expansion of an existing facility, the effectiveness of the existing design and operation must be discussed. An evaluation of relevant monitoring data and a discussion of all plan modifications and remedial actions 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 must also be noted

and discussed.

3.7.m. Waste Reduction and Recovery Information. -- The application 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 subdivision 3.7.m of this rule.

3.7.m.1. Waste Types, Sources, and Quantities. -- The application must include a brief description of the types, sources, 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.m.2. Description of Technologies. -- The application 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.m.3. Ongoing Program. -- The application 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.m.4. Recommendations. -- The application 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.m.5. Current Studies. -- The application must include a brief description of any waste reduction or recovery studies being conducted for wastes anticipated to be accepted

at the proposed facility.

3.7.m.6. Available Recovery Markets. -- The application 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.m.6.A. Market name and address;

3.7.m.6.B. Market requirements for minimum quantities and preparation for deliverable material; and

3.7.m.6.C. Prices paid for materials, including both current prices and ranges for the past three (3) years, if available.

3.7.m.7. Potential Energy Markets. -- The application 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.m.8. Future Effects. -- The application 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.n. Geotechnical Information. -- The application 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 subsection 3.8 of this rule.

3.7.o. Identification and Characterization of Potential Borrow Sources. -- The application must include an identification and characterization of the potential borrow sources

as detailed in subsection 3.12 of this rule.

3.7.p. Proposed Design and Operation. -- The application must include a proposed design based on conclusions outlined in the construction design section of the application as designated in subsection 3.10 of this rule. A general discussion of the proposed operating procedures must also be included.

3.7.q. Landfill Liners. -- The application must include plans, drawings, cross-sections, a Q.A./O.C. plan, and specifications for a liner system as designated in subsection 3.11 of this rule.

3.7.r. Verification of Application. -- The application 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 to the best of that individual's knowledge and belief, based upon inquiry.

3.7.s. Monthly tonnage limit of commercial solid waste facilities.

3.7.s.1. As provided for in W. Va. Code §22-15-8, the director Secretary shall will place a limit on the amount of solid waste received or disposed of per month in commercial solid waste facilities by considering, at a minimum, the following criteria:

3.7.s.1.A. The proximity and potential impact of the solid waste facility upon groundwater, surface water and potable water;

3.7.s.1.B. The projected life and design capacity of the solid waste facility including the available air space, and lined acreage;

3.7.s.1.C. The solid waste facility's equipment type, size, and production capacity:

3.7.s.1.D. Adequacy of the solid waste facility's personnel structure;

3.7.s.1.E. The solid waste facility's leachate management or treatment capabilities;

3.7.s.1.F. The transportation system networks to access the solid waste facility; and

3.7.s.1.G. Other factors related to environmentally safe and efficient disposal of solid waste;

3.7.s.2. The solid waste permit application ~~shall~~ must include significant information, acceptable to the ~~director~~ Secretary, for considering the above criteria in determining a commercial solid waste facility's monthly tonnage limit, including the certificate of need, certificate of siting approval, and, if applicable, the referendum.

3.8. General Geologic and Hydrologic Submission Requirements.

3.8.a. Site Information. -- The application must include the following information regarding the potential site:

3.8.a.1. Total acres of area permitted, or to be permitted;

3.8.a.2. Total acres of disposal area;

3.8.a.3. Planned life of facility;

3.8.a.4. Previous existence or present activities of mines or quarries at the site;

3.8.a.5. 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.a.5.A. The site and its boundaries;

3.8.a.5.B. The area surrounding the site for at least fifteen hundred (1,500) feet beyond the site boundaries;

- 3.8.a.5.C. The name of the USGS quadrangle;
- 3.8.a.5.D. The date of last USGS map revision;
- 3.8.a.5.E. The latitude and longitude of the center of the disposal area; and
- 3.8.a.5.F. The location of the items listed in paragraph 3.8.a.12 of this rule, unless such items are instead shown on the large-scale map;
- 3.8.a.6. A description of the site location;
- 3.8.a.7. A description of the site terrain;
- 3.8.a.8. A description of any title, deed, or usage restrictions affecting the proposed permit area;
- 3.8.a.9. The name of the town nearest to the site;
- 3.8.a.10. The name of the county, or counties in which the site is, or will be located;
- 3.8.a.11. 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 paragraph 3.8.a.12 of this rule, unless such items are instead shown on the 7.5 minute topographic map;
- 3.8.a.12. 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 subsections 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.a.12.A. Water supply wells;
- 3.8.a.12.B. Springs;
- 3.8.a.12.C. Natural wetlands (e.g., swamps, bogs, marshes);
- 3.8.a.12.D. Streams;
- 3.8.a.12.E. Public water supplies;
- 3.8.a.12.F. Other bodies of water;
- 3.8.a.12.G. Underground and surface mines (for underground mines, also indicate the subsidence angle of draw, as applicable);
- 3.8.a.12.H. Mine pool(s) and point(s) of discharge;
- 3.8.a.12.I. Mine refuse spoil piles, and any impoundment capabilities;
- 3.8.a.12.J. Quarries or sand and gravel pits;
- 3.8.a.12.K. Gas and oil wells;
- 3.8.a.12.L. Surface and groundwater quality monitoring points;
- 3.8.a.12.M. Occupied or habitable dwellings;
- 3.8.a.12.N. Roads;
- 3.8.a.12.O. Power lines, pipelines and other utilities;
- 3.8.a.12.P. Public buildings;
- 3.8.a.12.Q. Sinkholes;
- 3.8.a.12.R. Property boundaries;
- 3.8.a.12.S. Owners of record both surface and subsurface;
- 3.8.a.12.T. Easements or right-of-ways; and
- 3.8.a.12.U. One hundred (100) year floodplain boundary.

3.8.a.12.V. All areas prohibited by subsection 3.1 of this rule, or for which location standards have been established by subsection 3.2 of this rule.

3.8.b. Soils Information. -- Backhoe test pits or drilled test borings 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 each proposed disposal area and each proposed borrow source. Test pits or borings for all solid waste facilities must be located so as to identify all soil types distributed over the site. The applicant must provide the following:

3.8.b.1. 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.b.2. The soil maps must show the locations of all test pits or borings made to describe soils and determine their depth;

3.8.b.3. A description of soil horizons containing seventy-five percent (75%) or more coarse fragments (as per the Unified Soil Classification System) including:

3.8.b.3.A. Minimum thickness of soil to horizons with seventy-five percent (75%) or more coarse fragments;

3.8.b.3.B. Soil thickness determination procedures; and

3.8.b.3.C. Degree of weathering of coarse fragments.

3.8.b.4. Test pit or excavation descriptions including depth to all horizons, color, texture, structure, consistence, depth to and color of any mottles;

3.8.b.5. 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.b.6. A description of the following general soil characteristics;

3.8.b.6.A. Drainage characteristics of soil;

3.8.b.6.B. Maximum slopes at the proposed site; and

3.8.b.6.C. Shallowest depth from surface to mottling.

3.8.b.7. 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.b.8. 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.c. Site Geological Information. -- A minimum of four (4) test corings 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 must require one (1) additional test coring per ten (10) or less acres. Such test corings 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 must terminate must be determined by the following: the first coring 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 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 must be submitted to the ~~director~~Secretary.

3.8.c.1. The site geological analysis must provide the following information:

3.8.c.1.A. Sediments.

3.8.c.1.A.1. A notation of the presence of any sedimentary deposits under the proposed site including, but not limited to, colluvial, alluvial, or lacustrine;

3.8.c.1.A.2. A description of the type and texture of unconsolidated materials;

3.8.c.1.A.3. The thickness of unconsolidated materials including the maximum, minimum, and how the thickness was determined procedurally; and

3.8.c.1.A.4. A description of the different formations of unconsolidated materials and the effects of these sediments on potential discharges from the landfill;

3.8.c.1.B. Bedrock.

3.8.c.1.B.1. The formations and names;

3.8.c.1.B.2. 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.c.1.B.3. 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.c.1.B.4. A characterization of the degree of bedrock weathering;

3.8.c.1.B.5. The shallowest depth from surface to bedrock; and

3.8.c.1.B.6. 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.c.1.C. Structure.

3.8.c.1.C.1. 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.c.1.C.1.(a) Traces;

3.8.c.1.C.1.(b) Lineaments;

3.8.c.1.C.1.(c) Joints; and

3.8.c.1.C.1.(d) Faults.

3.8.c.1.C.2. A description of the influence that these fracture zones have on the movement of infiltrated water and groundwater;

3.8.c.1.C.3. A description of the regional bedrock structures in the area of the site;

3.8.c.1.C.4. 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 must be five (5) feet; for angles of five to thirty degrees, contour

intervals must be ten (10) feet; and for angles of greater than thirty (30) degrees, contour intervals must be twenty-five (25) feet. The use of intermediate contours in areas of low structural relief for greater detail is required;

3.8.c.1.C.5. 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.c.1.C.6. The strike and dip of bedding planes;

3.8.c.1.C.7. A description of the joints and fractures including strike, dip, and open joints and a description of the spacing of the joints;

3.8.c.1.C.8. 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.c.1.C.9. 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;

3.8.c.1.D. Mining.

3.8.c.1.D.1. A notation of the presence of any abandoned, reclaimed, active, and inactive surface mines on the site;

3.8.c.1.D.2. A list of any extractable coal seams beneath the site;

3.8.c.1.D.3. Any abandoned, reclaimed, active or inactive 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.c.1.D.4. Any mine maps and

related information for mined areas under the site or within fifteen hundred (1,500) feet of the site boundaries.

3.8.d. 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 be installed at appropriate locations and depths, to yield groundwater samples from the uppermost aquifer or the uppermost aquifer at all landfill sites. Monitoring wells -- one (1) upgradient and three (3) downgradient -- 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 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.d.1. Groundwater monitoring wells must meet the following specifications:

3.8.d.1.A. All monitoring well casings and screens 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 director Secretary. Lengths of pipe must be joined using threaded couplings. Solvent cement must not be used for PVC couplings. Borehole diameter must be a minimum of six (6) inches larger than the PVC casing. If approved by the director Secretary, the borehole diameter may be smaller if proven methods are employed to facilitate the emplacement of the filter pack and annular sealant.

3.8.d.1.B. The screened interval for monitoring wells 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 director Secretary. 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 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 ~~director~~ Secretary.

3.8.d.1.C. All wells 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 must be installed on top of the gravel packing.

3.8.d.1.D. All wells must be continuously grouted from the top of the impervious seal to above the groundwater table. Wells must not be grouted with cement below the potentiometric surface of the uppermost significant aquifer.

3.8.d.1.E. From below the frost line, the cap 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.d.1.F. Upon completion, all wells must be fully developed and pumped to determine the yield of the well.

3.8.d.1.G. The elevation of the top of the well casing must be two (2) to three (3) feet above the elevation of the ground surface.

3.8.d.1.H. All wells 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.d.a.I. All wells 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.d.1.J. In addition to the requirements of subdivision 3.8.d 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.d.1.J.1. Represent the quality of background groundwater that has not been affected by leakage from a SWLF.

3.8.d.1.J.2. A determination of the background quality may include sampling of wells that are not hydraulically upgradient of the waste management area where:

3.8.d.1.J.2.(a) Hydrogeologic conditions do not allow the permittee to determine what wells are hydraulically upgradient; or

3.8.d.1.J.2.(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.d.1.J.2.(c) Represent a quality of groundwater passing the relevant point of compliance specified by the ~~director~~ Secretary under subparagraph 4.5.d.1.G of this rule.

3.8.d.1.J.2.(d) The downgradient monitoring system must be installed at the relevant point of compliance specified by the ~~director~~ Secretary under subparagraph 4.5.d.1.G of this rule that ensures detection of groundwater contamination in the uppermost aquifer.

3.8.d.1.J.2.(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 Secretary that ensure detection of groundwater contamination in the uppermost aquifer.

3.8.d.1.K. The permittee may request the director Secretary 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 subdivision 3.8.d 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.d.1.K.1. Number, spacing, and orientation of the SWLFs;

3.8.d.1.K.2. Hydrogeologic setting;

3.8.d.1.K.3. Site history;

3.8.d.1.K.4. Engineering design of the SWLFs, and

3.8.d.1.K.5. Type of waste accepted at the SWLFs.

3.8.d.1.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.d.1.L.1. The permittee must notify the director Secretary that the documentation of 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.d.1.L.2. 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.d.1.M. The number, spacing, and depths of monitoring systems must be:

3.8.d.1.M.1. Determined based upon site-specific technical information that must include through characterization of:

3.8.d.1.M.1.(a) Aquifer thickness, groundwater flow rate, groundwater flow direction including seasonal and temporal fluctuations in groundwater flow; and

3.8.d.1.M.1.(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.d.1.M.2. Certified by a qualified groundwater scientist and approved in writing by the director Secretary.

3.8.d.1.M.2.(a) Within fourteen (14) days of this certification, the permittee must notify the director Secretary that the certification has been placed in the operating record.

3.8.d.2. Well Drilling. -- The method used to drill the groundwater monitoring wells 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 must be

included in the application.

3.8.d.3. Water Table. -- The maximum and minimum depth to the zone of saturation must be included in the application, along with the following:

3.8.d.3.A. Seasonal water table fluctuations at the above locations and seeps and springs affected by seasonal changes must be described in the application and the source of information must be referenced;

3.8.d.3.B. Perched or special water table conditions must be described in the application;

3.8.d.3.C. The minimum depth to a perched water table must be provided in the application.

3.8.d.3.D. The occurrence of groundwater drainage to underground mines 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 paragraph 3.8.a.12 of this rule.

3.8.d.4. Groundwater Movement.

3.8.d.4.A. A large-scale map (1 inch = 200 feet) showing all groundwater flow directions must be constructed and included in the application. The water table/potentiometric surface must be contoured on this map using an appropriate contour interval.

3.8.d.4.B. The approximate rate of groundwater flow and the method used to determine that rate of flow must be provided in the application.

3.8.d.4.C. The method used to determine groundwater flow directions must be included in the application.

3.8.d.4.D. The location of all groundwater discharge points related to the site must be shown on the large-scale map required under subparagraph 3.8.d.4.A of this rule.

3.8.d.4.E. If the site is in a groundwater discharge or recharge zone, this fact must be noted in the application.

3.8.d.4.F. The rate of groundwater flow at the site and its effects on the operation of the proposed facility must be discussed in the application.

3.8.d.5. 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 must be provided in the application. All sampling procedures must be included in the application and approved by the director Secretary. Analyses for the constituents listed in Appendix I; the facility permit; or an order by the director Secretary and any other parameter(s) specified by the director Secretary in writing must be conducted.

3.8.d.6. Surface Water.

3.8.d.6.A. The name of the nearest stream to the site and its 7Q10 low flow 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.d.6.B. The surface drainage area of the tributary on which the site is located must be plotted on a map and included in the application.

3.8.d.6.C. The estimated peak surface water drainage flow of the tributary on which the site is located for a 25-year, 24-hour storm must be included in the application.

3.8.d.6.D. The maximum and minimum of surface slopes of the tributary on which the site is located must be included in the application.

3.8.d.6.E. The results of an analysis of

water from one (1) grab sample from the nearest stream to the site must be included in the application. This analysis must be performed for the same parameters referenced in paragraph 3.8.d.5 of this rule with the addition of total suspended solids.

3.8.e. Water Budget. -- A water budget 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.e.1. Average monthly temperature;

3.8.e.2. Average monthly precipitation;

3.8.e.3. Evaporation;

3.8.e.4. Evapotranspiration;

3.8.e.5. Surface slope and topsoil texture;

3.8.e.6. Soil moisture holding capacity and root zone depth;

3.8.e.7. Runoff coefficients;

3.8.e.8. Moisture contribution from the waste; and

3.8.e.9. Any groundwater contribution.

3.8.f. Liners and Leachate Collection System Efficiency. -- The collection efficiency of the leachate collection system at the landfill 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.f.1. The saturated hydraulic conductivity of the liner;

3.8.f.2. Liner thickness;

3.8.f.3. The saturated hydraulic conductivity of the drainage blanket;

3.8.f.4. Drainage blanket porosity;

3.8.f.5. The base slope of the liner;

3.8.f.6. The maximum flow distance across the liner;

3.8.f.7. Annual infiltration; and

3.8.f.8. Any groundwater inflow.

3.8.g. Leachate Generation. -- Information gained from the collection efficiency calculations must be used to predict the daily volume of leachate collected from the landfill.

3.8.h. Waste and Leachate Characterization.

3.8.h.1. Industrial Wastes. -- Unless otherwise approved, the physical and chemical characteristics of all wastes and leachates must be analyzed and described. When more than one waste is generated, testing shall be performed on each waste stream. All leaching tests must be done in accordance with published test procedures. Physical tests must be done in accordance with ASTM standards or published test procedures. All testing procedures 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, must be discussed with the ~~director~~ Secretary 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~~ Secretary.

3.8.h.2. 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 must be included for all facilities for the disposal of municipal solid waste.

3.8.i. 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 subdivision 3.8.i of this rule.

3.8.i.1. 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.i.1.A. A description of the non-liquid or liquid waste to be stored;

3.8.i.1.B. The estimated volume of the non-liquid or liquid waste generated and a proposed recordkeeping system to record actual quantities stored;

3.8.i.1.C. A schedule of stored waste removal;

3.8.i.1.D. A description of the final treatment and disposal of the stored waste; and

3.8.i.1.E. A description of the storage facility design.

3.9. Existing Land Use and Environmental Assessment.

3.9.a. Land Use Information. -- The application 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 must be included in the application. The application 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

(1/2) mile of the permit area for all other facilities. The presentation of land use information in the application must be supplemented with land use maps and, at a minimum, must specifically address the following:

3.9.a.1. Adjacent Landowners. -- The identity and location of the adjacent landowners must be discussed in narrative form. This information may be presented on a plat map but must reflect current ownership conditions and any changes must be so noted;

3.9.a.2. Land Use Zoning. -- The application 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.a.3. Documentation of Present Land Uses. -- The application must include a description of the present land use in the area. Particular emphasis must be placed on the discussion of known recreational, historical, archaeological, or environmentally unique areas. The application must include a letter from the Division of Natural Resources' Section of Wildlife Resources addressing the presence of any endangered or threatened species of animal or plant in the vicinity of the proposed facility. The application must include a letter from the West Virginia Division of Culture and History addressing the presence of any 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 must also be addressed in the application.

3.9.a.4. Transportation and Access. -- Present and proposed transportation routes and access roads, including any weight restrictions, must be delineated in the application.

3.9.b. Environmental Review. -- The

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

3.9.b.1. Project Summary. -- The application must include a brief summary of the project, with particular attention given to the following:

3.9.b.1.A. The purpose and need for the proposed facility including the history and background of the project;

3.9.b.1.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.b.1.C. The estimated cost and funding source for the facility.

3.9.b.2. Proposed Physical Changes. -- The application 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.b.2.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.b.2.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.b.2.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.b.2.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.b.2.E. Other changes anticipated with facility development; and

3.9.b.2.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.b.3. Existing Environment. -- The application 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.b.3.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.b.3.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.b.3.C. Land use information including dominant features and zoning in the

area;

3.9.b.3.D. Social and economic conditions including any ethnic or cultural groups;

3.9.b.3.E. Other special resources such as archaeological, historical, state natural areas, and prime agricultural lands; and

3.9.b.3.F. Public and private drinking water supplies.

3.9.b.4. Environmental Consequences. -- The application 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.b.4.A. The physical impacts which would be associated with facility design, construction, and operation, including visual impacts if applicable;

3.9.b.4.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.b.4.C. The impacts on land use;

3.9.b.4.D. The social and economic impacts to local residents, cultural groups, and the communities and industries served by the facility;

3.9.b.4.E. Other special resources such as archaeological, historical, state natural areas, and prime agricultural lands; and

3.9.b.4.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.a. Report Preparation. -- The application must include a report describing the proposed landfill design. At a minimum, this report must include the following:

3.10.a.1. 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.a.2. 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.a.3. 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.a.4. 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 subsection 4.11 of this rule;

3.10.a.5. The proposed closure plan and final use as specified in subsection 6.1 of this rule;

3.10.a.6. The proposed method of demonstrating financial responsibility for closure, post-closure 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 care and corrective action. An estimated cost per ton for

disposal must also be included;

3.10.a.7. Proposed design for access roads;

3.10.a.8. Proposed design for drainage and sediment control; and

3.10.a.9. Proposed revegetation plan including seed mixture, seed bed preparation, fertilizers, mulching, and maintenance schedule.

3.10.b. 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 directorSecretary in writing) as follows:

3.10.b.1. 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 must be used as a base map for this plan sheet;

3.10.b.2. 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.b.3. A monitoring plan sheet showing the proposed groundwater, leachate, surface water, gas, air unsaturated zone, and any other monitoring programs;

3.10.b.4. A drainage plan sheet showing:

3.10.b.4.A. The directional flow of water on and away from the land to be affected;

3.10.b.4.B. The location of all erosion and sedimentation control structures;

3.10.b.4.C. The component drainage area together with a table showing total acreage and disturbed acreage within each component; and

3.10.b.4.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.b.5. A detailed plan sheet showing proposed closure sequence and final grades;

3.10.b.6. A plan sheet showing the details of proposed design features for the major engineering structures at the facility; and

3.10.b.7. A plan sheet for any blasting that must be conducted at the facility. All blasting operations must comply with the following:

3.10.b.7.A. The blasting must be done during clear weather and during times when there is minimal traffic;

3.10.b.7.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.b.7.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.b.7.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.b.7.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.b.7.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.b.7.G. Blasting must not be conducted on Sunday.

3.10.c. Sequencing of Solid Waste Disposal.

3.10.c.1. Solid Waste Placement Schedule. -- The sequence of solid waste disposal must be specified in a schedule of solid waste placement which must be approved by the ~~director~~Secretary. The solid waste placement schedule 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 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 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.c.2. Solid Waste Disposal Coordination. -- The schedule of solid waste placement 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.a. Performance Standards. -- The application must contain plans, drawings, 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 subdivision 4.5.d of this rule, and including the following:

3.11.a.1. The design of the liner system;

3.11.a.2. The thickness and characteristics

of the subbase;

3.11.a.3. The thickness and characteristics of the leachate detection zone;

3.11.a.4. The design for the leachate monitoring system in the leachate detection zone;

3.11.a.5. The nature and thickness of the liner material;

3.11.a.6. The thickness and characteristics of the leachate collection zone;

3.11.a.7. The design for the leachate collection system in the collection zone;

3.11.a.8. The thickness and characteristics of the protective cover; and

3.11.a.9. A plan for installing the liner system.

3.11.b. Q.A./Q.C. Plan. -- The application 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 must include:

3.11.b.1. A description of the testing procedures and construction methods proposed to be implemented during construction of the liner system;

3.11.b.2. 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.b.3. 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.c. Leachate Considerations. -- The

application 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. Borrow Sources for Landfills.

3.12.a. General. -- The application 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.b. 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 subdivision 3.8.b of this rule unless an alternative geotechnical investigation program is approved by the in writing. Applicants may submit an alternative program in cases where previous information exists regarding the proposed source.

3.12.c. Data Presentation. -- The following information must be submitted as part of the application:

3.12.c.1. The calculated volume of acceptable material based on the information obtained from the test pits or borings;

3.12.c.2. 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.c.3. An isopach map showing the thickness of acceptable material;

3.12.c.4. A description of the methods to be used for separating the acceptable materials from any unacceptable materials;

3.12.c.5. 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 subdivision 4.5.f of this rule; and

3.12.c.6. 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 subsection 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 subdivisions 3.7.j, 3.13.n, 3.13.o, and 3.13.p of this rule, and

3.13.a. Requirements for Commercial Solid Waste Facilities.

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

3.13.a.1. The ~~director~~Secretary will not approve a new, reissued, renewed, or modified permit for a commercial solid waste facility unless the applicant first submits to the ~~director~~Secretary a bond or other form of financial assurance, as applicable, in accordance with this rule and the bond or other

form of financial assurance is approved by the directorSecretary.

3.13.a.2. 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 directorSecretary and is in full force and effect.

3.13.a.3. A person who holds a valid Division Department permit to conduct a commercial solid waste activity but wishes to modify, transfer, assign, or perform any other permitting function must comply with paragraph 3.13.a.2 of this rule, and must file a bond or other type of financial assurance with the directorSecretary prior to receiving the approval of the directorSecretary for the permit, modification or other permitting function as required under this rule.

3.13.a.4. Applicability. -- The requirements of this paragraph apply to permittees of all SWLFs, except as provided in subdivision 3.13.a. 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 paragraph, since their debts and liabilities are the debts and liabilities of the state or the United States.

3.13.b. General Bonding and Financial Assurance Requirements.

3.13.b.1. All forms of financial assurance and bonds must be submitted under the requirements of this rule on a form prepared and furnished by the directorSecretary, 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 at least thirty (30) years after final closure of the permit site. Any further time period required to achieve compliance with the requirements of the closure plan of the permit or other requirements of the

Division Department must be considered an additional liability period.

3.13.b.1.A. The use of any of the mechanisms listed in subsection 3.13 of this rule, must ensure the satisfaction of the following criteria:

3.13.b.1.A.1. 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.b.1.A.2. That funds will be available in a timely fashion when needed;

3.13.b.1.A.3. In the case of closure and post closure care, the financial assurance mechanism(s) must be in full force and effect prior to the initial receipt of solid waste, and in the case of corrective action, no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of subdivision 4.11.g of this rule, until the permittee is released from the financial assurance requirements under subdivisions 3.13.n, 3.13.o, and 3.13.p of this rule.

3.13.b.1.A.4. The financial assurance mechanisms must be legally valid, binding, and enforceable under state and federal law.

3.13.b.2. 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.b.3. All forms of financial assurance or bonds must be conditioned on compliance with the Solid Waste Management Act, any rules promulgated thereunder, orders issued by the directorSecretary, and the terms and conditions of the permit.

3.13.b.4. All forms of financial

assurance or bonds will be reviewed for legality and form in accordance with established Division Department procedures.

3.13.b.5. 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.b.6. With the directorSecretary's permission, the permittee may remove the deposit if it is first replaced with an equivalent or greater deposit.

3.13.b.7. If for any reason a permittee fails to maintain proper financial assurance or bonding, the directorSecretary will issue a cease and desist order and revoke the permit and the permittee becomes fully liable for the amount of the bond.

3.13.b.8. 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.c. Other Allowable Mechanisms of Financial Assurance or Bonding.

3.13.c.1. The directorSecretary will accept the following types of financial assurance or bonding:

3.13.c.1.A. A surety bond;

3.13.c.1.B. A collateral bond (including cash and securities);

3.13.c.1.B.1. Cash deposits;

3.13.c.1.B.2. Collateral securities;

3.13.c.1.B.3. Certificates, including;

3.13.c.1.B.3.(a) Bonds of the United States or its possessions;

3.13.c.1.B.3.(b) Bonds of the Federal Land Bank;

3.13.c.1.B.3.(c) Bonds of the Homeowners Loan Corporation;

3.13.c.1.B.3.(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.c.1.C. Escrow Account. -- An escrow account;

3.13.c.1.D. Collateral bonds; including;

3.13.c.1.D.1. Letters of credit;

3.13.c.1.D.2. Certificates of deposit; and

3.13.c.1.D.3. Negotiable bonds.

3.13.c.1.E. Performance bonding fund participation (as established by the directorSecretary);

3.13.c.1.F. Trust Fund.

3.13.c.1.G. State-Approved Mechanism (Reserved).

3.13.c.1.H. State Assumption of Responsibility (Reserved).

3.13.c.1.I. Use of Multiple Financial Mechanisms.

3.13.d. 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 subdivision.

3.13.d.1. The ~~director~~Secretary will not accept the bond of a surety company that has failed, or unduly delayed, as determined by the ~~director~~Secretary, in making payment on a forfeited surety bond.

3.13.d.1.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.d.2. The ~~director~~Secretary 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~~Secretary. 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.d.3. The bond must provide that full payment will be made under the bond within thirty (30) days of receipt of the ~~Division~~Department's declaration of forfeiture by the surety.

3.13.d.4. The ~~director~~Secretary will not accept surety bonds from a surety company when the total bond liability to the ~~Division~~Department for bonds filed by the permittee, the principal and related parties exceed the surety company's single risk limit.

3.13.d.4.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~~Secretary 120 days in advance of cancellation.

3.13.d.4.A.1. If the surety cancels the bond, the permittee must obtain alternative financial assurance as specified in this part.

3.13.d.4.A.2. The permittee may cancel the bond only if alternative financial assurance is substituted as specified in this part or if the permittee is no longer required to

demonstrate financial responsibility in accordance with paragraphs 3.13.n.2, 3.13.o.2, or 3.13.p.2 of this rule.

3.13.d.5. The bond must provide that the surety and the principal are jointly and severally liable for payment of the bond amount.

3.13.d.6. Surety Bond Forfeiture.

3.13.d.6.A. The ~~director~~Secretary will provide in the bond that the amount must be confessed to judgment and execution upon forfeiture.

3.13.d.6.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.d.7. The ~~Division~~Department 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.d.8. The bond must provide that the surety will give written notice to the principal and the ~~Division~~Department 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.d.8.A. The insolvency or bankruptcy of the surety.

3.13.d.8.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.d.9. Surety Bonds for Corrective Action, Closure and Post-Closure Care.

3.13.d.9.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 subparagraph.

3.13.d.9.B. A bond for corrective action must be in accordance with part 3.13.b.1.A.3.

3.13.d.9.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 subdivision 4.11.g.

3.13.d.10. Standby Trust Fund.

3.13.d.10.A. As provided in paragraph 3.13.d.10 of this rule, the permittee must establish a standby trust fund.

3.13.d.10.B. The standby trust fund must meet the requirements of subsection 3.13 of this rule, except the requirements for initial payment and subsequent annual payments specified in paragraph 3.13.k.1 of this rule.

3.13.d.10.C. Payments made under the terms of the bond will be deposited by the surety directly into the standby trust fund.

3.13.d.10.D. Payments from the trust fund must be approved by the trustee.

3.13.e. General Terms and Conditions for Collateral Bonds.

3.13.e.1. The applicant may submit a collateral bond in one or more of the following forms:

3.13.e.1.A. Cash deposits.

3.13.e.1.B. Certified checks, cashiers' 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.e.1.C. Automatically renewable and

assignable certificates of deposit from banks or banking institutions authorized to do business in this state.

3.13.e.1.D. Automatically renewable, irrevocable standby letters of credit from banks or banking institutions authorized to do business in this state.

3.13.e.1.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, municipality, or of other states.

3.13.e.2. 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.e.3. The ~~director~~Secretary will place collateral submitted under 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~~Secretary.

3.13.e.4. 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 must vest in the State a property interest in the collateral which must remain until released under the terms of this rule, and may not be affected by the bankruptcy, insolvency, or other financial incapacity of the permittee.

3.13.e.5. 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~~Secretary may require proof of ownership, and other means such as secondary agreements, as he or she deems necessary to meet the requirements of this rule. If the ~~director~~Secretary determines that collateral deposited does not meet the requirements of

this rule, he or she may take action under the law to protect the state's interest in the collateral.

3.13.f. Collateral Bonds; Escrow.

3.13.f.1. The ~~director~~Secretary may authorize the permittee to establish an escrow account deposited in one or more federally-insured accounts payable on demand only to the ~~director~~Secretary, or directly deposited with the ~~director~~Secretary.

3.13.f.2. Escrow funds deposited in federally-insured accounts 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.f.3. Interest paid on an escrow account must be retained in the escrow account and applied to the bond value of the escrow account unless the ~~director~~Secretary has approved that the interest be paid to the permittee. In order to qualify for interest payment, the permittee must request such action in writing during the permit application process.

3.13.g. Collateral Bonds; Letters of Credit. -
- A permittee may satisfy the requirements of this subdivision by obtaining an irrevocable standby letter of credit which conforms to the requirements of this subdivision.

3.13.g.1. Bank letters of credit submitted as collateral for collateral bonds are subject to the following conditions:

3.13.g.1.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 an applicant's unqualified obligation to reimburse

the issuer for monies paid under the letter of credit.

3.13.g.1.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 paragraph 3.13.k.1 of this rule.

3.13.g.1.B.1. 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~~Secretary 90 days in advance of cancellation.

3.13.g.1.B.2. If the letter of credit is canceled by the issuing institution, the permittee must obtain alternative financial assurance or bonding.

3.13.g.1.B.3. The permittee may cancel the letter of credit only if alternative financial assurance or bonding is substituted as specified in this part or if the permittee is released from the requirements of this part in accordance with paragraphs 3.13.n.2, 3.13.o.2, or 3.13.p.2 of this rule.

3.13.g.1.B.4. 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.g.1.C. The ~~director~~Secretary may not accept letters of credit issued for an applicant when the amounts of the letter of credit, aggregated with other loans and credits extended to the applicant, exceeds the issuer's legal lending limit for that applicant as defined in the United States Banking Code (12 U.S.C.

§§21-220).

3.13.g.1.D. Letters of credit must name the West Virginia ~~Division~~ Department of Environmental Protection as beneficiary and must be payable to the ~~Division~~ Department upon demand, in part or in full, upon presentation of the ~~Division~~ Department's drafts, at sight. The ~~Division~~ Department's right to draw upon the letter of credit does not require documentary or other proof by the ~~Division~~ Department that the applicant has violated the conditions of the bond, the permit, or another requirement.

3.13.g.1.E. The ~~director~~Secretary 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.g.2. The ~~director~~Secretary 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.g.3. The ~~director~~Secretary will provide in the indemnity agreement that the amount will be confessed to judgement upon forfeiture.

3.13.g.4. The letter of credit must provide that:

3.13.g.4.A. The bank will give prompt notice to the permittee and the ~~director~~Secretary 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.g.4.B. In the event the bank becomes unable to fulfill its obligations under the letter of credit for any reason, notice must be given immediately to the permittee and the ~~director~~Secretary.

3.13.g.4.C. Upon the incapacity of a bank by reason of bankruptcy, insolvency, suspension or revocation of its charter or license, the permittee must be deemed to be without bond coverage. The ~~director~~Secretary 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~~Secretary must immediately revoke the permit. The permittee will be fully liable for the amount of the bond coverage.

3.13.g.4.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~~Secretary. 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~~Secretary 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.g.5. The issuing bank must waive the rights of setoff or liens which it has or might have against the letter of credit.

3.13.g.6. If the ~~director~~Secretary 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~~Secretary, the ~~Division~~ Department will hold the proceeds as cash collateral.

3.13.g.7. After the letter of credit is approved by the ~~director~~Secretary, the permittee must retain a copy of the letter of credit in the facility operating record.

3.13.g.8. In the case of closure and post-closure care, the letter of credit must be effective before the initial receipt of waste or corrective action, no later than 120 days after

the corrective action remedy has been selected in accordance with the requirements of subdivision 4.11.f of this rule.

3.13.g.9. 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.h. Collateral Bonds; Certificates of Deposit.

3.13.h.1. Certificates of deposit submitted as collateral for collateral bonds are subject to the following conditions:

3.13.h.1.A. The certificates of deposit must be made payable to the ~~Division~~ Department or the permittee and the ~~Division~~ Department and must be assigned to the ~~Division~~ Department by the permittee, in writing, as required by the ~~director~~ Secretary and on forms provided by the ~~director~~ Secretary. The assignment must be recorded upon the books of the bank issuing the certificate.

3.13.h.1.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.h.1.C. The ~~director~~ Secretary 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.h.1.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.h.1.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.h.1.F. The permittee must submit certificates of deposit in amounts which will allow the ~~Division~~ Department to liquidate the certificates prior to maturity, upon forfeiture, for the full amount of the bond determined in accordance with and required by this rule, without penalty to the ~~Division~~ Department.

3.13.h.1.G. The ~~director~~ Secretary 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 ~~Division~~ Department.

3.13.h.1.H. The permittee is not entitled to interest accruing after forfeiture is declared by the ~~Division~~ Department, unless and until the forfeiture declaration is ruled invalid by a court having jurisdiction over the ~~Division~~ Department, and the ruling is final.

3.13.i. Collateral Bonds; Negotiable Bonds.

3.13.i.1. Negotiable bonds submitted and pledged as collateral for collateral bonds are subject to the following conditions:

3.13.i.1.A. The ~~director~~ Secretary may determine the current market value of governmental securities for the purpose of establishing the value of the securities for bond deposit.

3.13.i.1.B. The current market value must be at least equal to the amount of the required bond.

3.13.i.1.C. The ~~Division~~ Department 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.i.1.D. The permittee may request and receive the interest accruing on governmental securities with the ~~Division~~ Department 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.j. Use of Multiple Mechanisms

3.13.j.1. The ~~director~~Secretary may accept financial assurance or bond which is comprised of more than one financial mechanism per facility, as listed in 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.j.1.A. The instruments chosen must be construed as part of the entire bond for the facility.

3.13.j.1.B. The ~~director~~Secretary 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, this rule, or orders of the ~~director~~Secretary.

3.13.j.1.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.k. Other Forms of Bonding. -- Other forms of bonding including, but not limited to;

3.13.k.1. Trust Fund.

3.13.k.1.A. A permittee may satisfy the requirements of this subparagraph by establishing

a trust fund which conforms to the requirements of this subparagraph.

3.13.k.1.A.1. 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.k.1.A.2. A copy of the trust agreement must be placed in the facility's operating record.

3.13.k.1.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.k.1.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 paragraph 3.13.k.3 of this rule, divided by the number of years in the corrective action pay-in period as defined in subparagraph 3.13.p.1.C of this rule.

3.13.k.1.D. The amount of subsequent payments must be determined by the following formula:

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

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

3.13.k.1.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 paragraph 3.13.k.3 of this rule, divided by the number of years in the corrective action pay-in period as defined in subparagraph 3.13.p.1.C of this rule.

3.13.k.1.E.1. The amount of subsequent payments must be determined by the following formula:

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

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

3.13.k.1.F. In the case of closure and post closure care, the initial payment into the trust fund must be made before the initial receipt of waste and in the case of corrective action, no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of subdivision 4.11.g of this rule.

3.13.k.1.G. If the permittee establishes a trust fund after having used one or more alternative mechanisms specified in this subparagraph, 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 subdivision 3.13.k.1 of this rule.

3.13.k.1.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.k.1.H.1. 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.k.1.H.2. The permittee must notify the directorSecretary that the documentation of the justification for reimbursement has been placed in the operating record and that reimbursement has been received.

3.13.k.1.I. The trust fund may be terminated by the permittee only if the permittee substitutes alternative financial assurance as specified in this subparagraph or if he or she is no longer required to demonstrate financial responsibility in accordance with the requirements of paragraphs 3.13.n.2, 3.13.o.2 or 3.13.p.2 of this rule.

3.13.k.2. State-Approved Mechanism. (Reserved)

3.13.k.3. State Assumption of Responsibility. (Reserved)

3.13.l. Replacement of Existing Bond.

3.13.l.1. The directorSecretary 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 directorSecretary. The bond amount for this replacement bond will be determined under this rule, but may not be less than the amount on deposit with the Division Department.

3.13.l.2. The Division Department will not release existing bonds until the permittee has submitted and the directorSecretary has

approved acceptable replacement bonds that are in full force and effect. A replacement of bonds under subdivision 3.13.l of this rule does not constitute a release of bond under this rule.

3.13.m. Bond Amounts.

3.13.m.1. In accordance with the provisions of W. Va. Code §22-15-12, all permits 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.n. Financial Assurance for Closure.

3.13.n.1. 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.n.1.A. The permittee must notify the directorSecretary in writing of that estimate and maintain a copy in the operating record.

3.13.n.1.A.1. 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 part 6.1.e.3.A.2 of this rule).

3.13.n.1.A.2. During the active life of the SWLF, the permittee must annually adjust the closure cost estimate for inflation.

3.13.n.1.A.3. The permittee must increase the closure cost estimate and the amount of financial assurance provided under subparagraph 3.13.n.2.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.n.1.A.4. The permittee may

reduce the closure cost estimate and the amount of financial assurance provided under subparagraph 3.13.n.2.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.n.1.A.4.(a) The permittee must notify the directorSecretary 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.n.2. The permittee of each SWLF's operating record must establish financial assurance for closure of the SWLF in compliance with subsection 3.13 of this rule.

3.13.n.2.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.o. Financial Assurance for Post-Closure Care.

3.13.o.1. 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 subsection 6.3 of this rule.

3.13.o.1.A. The post-closure cost estimate used to demonstrate financial assurance in paragraph 3.13.o.2 and subparagraph 3.13.o.2.A of this subparagraph 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 directorSecretary that a copy of the estimate has been placed in the operating record.

3.13.o.1.A.1. The cost estimate for post-closure care must be based on the most

expensive costs of post-closure care during the post-closure care period.

3.13.o.1.A.2. 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.o.1.A.3. The permittee must increase the post-closure care cost estimate and the amount of financial assurance provided under paragraph 3.13.o.2 and subparagraph 3.13.o.2.A of this rule, if changes in the post-closure plan or SWLF conditions increase the maximum costs of post-closure care.

3.13.o.1.A.4. The permittee may reduce the post-closure cost estimate and the amount of financial assurance provided under paragraph 3.13.o.2 of this rule, if the cost estimate exceeds the maximum costs of post-closure care remaining over the post-closure care period.

3.13.o.1.A.4.(a) The permittee must notify the ~~director~~Secretary and receive written approval of the ~~director~~Secretary 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.o.2. The permittee of each SWLF must establish, in a manner in accordance with subdivision 3.13.k of this rule, financial assurance for the costs of post-closure care as required under subsection 6.3 of this rule.

3.13.o.2.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 paragraph 6.3.g.1 of this rule.

3.13.p. Financial Assurance for Corrective Action.

3.13.p.1. A permittee of a SWLF required to undertake a corrective action program under

subdivision 4.11.g 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 subdivision 4.11.g of this rule.

3.13.p.1.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.p.1.A.1. The permittee must notify the ~~director~~Secretary that the estimate has been placed in the operating record.

3.13.p.1.B. The permittee must annually adjust the estimate for inflation until the corrective action program is completed in accordance with paragraphs 4.11.g.6 and 7 of this rule.

3.13.p.1.C. The permittee must increase the corrective action cost estimate and the amount of financial assurance provided under paragraph 3.13.p.2 of this rule, if changes in the corrective action program or SWLF conditions increase the maximum costs of corrective action.

3.13.p.1.D. The permittee may reduce the amount of the corrective action cost estimate and the amount of financial assurance provided under paragraph 3.13.p.2 of this rule, if the cost estimate exceeds the maximum remaining costs of corrective action.

3.13.p.1.D.1. The permittee must notify the ~~director~~Secretary 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.p.2. The permittee of each SWLF required to undertake a corrective action program under subdivision 4.11.g of this rule must establish, in a manner in accordance with

subsection 3.13 of this rule, financial assurance for the most recent corrective action program.

3.13.p.2.A. The permittee must provide continuous coverage for corrective action until released from financial assurance requirements for corrective action by demonstrating compliance with paragraphs 4.11.g.6 and 4.11.g.7 of this rule.

3.14. Background Investigation Disclosure Statement.

3.14.a. Applicability. -- Every applicant for a solid waste facility permit must file a background investigation disclosure statement with the directorSecretary at the time the initial application is filed, unless exempt from such disclosure under the provisions of subdivision 3.14.d of this rule.

3.14.b. Copies and Fees. -- Background investigation disclosure statements must be filed by submitting a notarized original and one (1) certified copy of all papers and other applicable documents, to the directorSecretary accompanied by a nonrefundable investigation fee in accordance with the schedule of fees in Appendix IV to this rule.

3.14.b.1. Additional certified copies of background investigation disclosure statements, or any portions thereof, must be supplied upon the request of the directorSecretary.

3.14.b.2. Within sixty (60) days of receipt of a background investigation disclosure statement from a permit applicant, the directorSecretary must advise the permit applicant if the background investigation disclosure statement is incomplete on its face, and must specify what additional information is required.

3.14.b.3. Additional Costs - Should the cost of the background investigation be more than the nonrefundable investigation fee paid by the permittee described in subdivision 3.14.b, the permittee will reimburse the department for its

costs beyond those paid by the permittee's investigation fee, prior to the issuance of a solid waste facility permit.

3.14.c. Fingerprinting Requirements. -- Any applicant required to be listed in the background investigation disclosure statement, must be fingerprinted for identification and investigation purposes in accordance with procedures established by the directorSecretary.

3.14.c.1. Completed fingerprint cards must be supplied by the applicant with the background investigation disclosure statement, when submitted. The applicant must arrange for the taking of fingerprints.

3.14.c.2. 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.d. Exemptions. -- The following persons are exempted from the requirement to submit a background investigation disclosure statement:

3.14.d.1. Any person who is an employee of any department, division, agency, commission or authority of the federal, state, county, or municipal government or agency thereof.

3.14.d.2. Any person whose application or permit is solely for a Class E, or Class F facility.

3.14.e. Contents of Background Investigation Disclosure Statement. -- The background investigation disclosure statement must be filed on forms supplied by the directorSecretary and must be completed in accordance with W. Va. Code §22-15-5 and include the following:

3.14.e.1. The applicant or any officer, ~~director~~Secretary, or manager, any shareholder owning five percent (5%) or more of its capital stock, beneficial or otherwise including ultimate parent corporations, and any other person conducting or managing the affairs of the applicant or the proposed permitted premises;

3.14.e.2. The disclosure statement must contain the full name, 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 solid waste or hazardous waste, that are or have been issued to or possessed by the applicant and any person or persons required to be listed by paragraph 3.14.e.1 of this rule;

3.14.e.3. 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.e.4. 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.e.5. Any other information the ~~director~~Secretary may require that relates to the competency, reliability or good character of the applicant, or as required by W. Va. Code §22-15-5.

3.14.f. Signature.

3.14.f.1. Background investigation disclosure statements must be signed by each of the following:

3.14.f.1.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.f.1.B. If of a partnership, by each of its partners; if of a limited partnership, only by each of its general partners.

3.14.f.1.C. If of any other business concern, by its chief executive officer, its secretary, and its treasurer.

3.14.f.1.D. If of a natural person, by the person him, or herself.

3.14.f.2. All signatures must be signed in ink and dated on original papers. The name and address of the signatory must be typed, stamped, or legibly printed beneath each signature. All signatures must be notarized.

3.14.g. Change of Information on Background Investigation Disclosure Statement. -- Where an applicant has an application pending before the ~~director~~Secretary and any of the information required to be included in a background investigation disclosure statement changes, or any additional information must be added after the filing of the statement, the applicant must provide that change of information to the ~~director~~Secretary in writing within thirty (30) days of the change or addition.

3.14.h. Reporting Requirements. -- Permittees must report to the ~~director~~Secretary within thirty (30) days any changes or additions in the following information required to be included in the background investigation disclosure statement:

3.14.h.1. The name of the permittee or applicant;

3.14.h.2. The names or identities of any applicant or any officer, ~~director~~Secretary, or manager, thereof, shareholder owning five percent (5) or more of its capital stock, beneficial or otherwise, including ultimate parent corporations, and any other person conducting or managing the affairs of the

applicant or the proposed permitted premises;

3.14.h.3. 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.h.4. A listing and explanation of any notices of violation, orders, or license revocations issued by any state or federal authority:

3.14.h.4.A. Any judgement of liability or conviction rendered against the permittee or against any key employee, officer, directorSecretary, 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.

3.14.h.5. Changes of information required to be reported pursuant to paragraph 3.14.h.6 of this rule may be filed by letter or on copies of applicable portions of background investigation disclosure statement forms. The person filing the report of change must swear to or affirm the truth of the information contained therein.

3.14.h.6. Filing of Changes of Information. -- Changes of information must be filed by submitting an original and one certified copy to the directorSecretary.

3.14.i. Annual Updates. -- The background investigation disclosure statement annual updates must be filed yearly on the anniversary of the permit issuance. It must be filed on forms supplied by the directorSecretary and must contain all changes including but not limited to deletions in officers, directorSecretarys, managers, owners, companies, etc. that have occurred since the submittal of previous application. If there have been any additions to the officers, directorSecretarys, 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 directorSecretary; 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 Department including proper filing fees and fingerprint cards.

3.14.j. Notarization of Annual Updates. -- Annual updates must be notarized.

3.14.k. 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 directorSecretary is more than five (5) years old, the directorSecretary may require the applicant or permittee to file a new background investigation disclosure statement.

3.14.l. Additional Information; Duty to Cooperate. -- All applicants and permittees have the continuing duty to provide any assistance or information requested by the directorSecretary and to cooperate in any inquiry, investigation, or hearing conducted by the directorSecretary. If, upon issuance of formal request to answer any inquiry or produce information, evidence or testimony, and applicant or permittee refuses to comply, the permit of that person may be denied or revoked by the directorSecretary.

3.14.m. Physical Evidence. -- Upon request, the applicant must supply physical evidence, including, but not limited to, photographs or handwriting exemplars of any person listed on the background investigation disclosure statement or any amendment thereof.

3.14.n. Disqualification Criterion. -- No permit may be approved by the

directorSecretary unless the applicant demonstrates compliance with the provisions of W. Va. Code §22-15-5.

3.14.o. Cause for Permit Revocation. -- In addition to any other cause set forth elsewhere in this rule, any permit may be revoked for any violation of W. Va. Code §22-15-5.

3.14.p. Severance of Disqualifying Individuals. -- Notwithstanding the disqualification of any applicant or permittee pursuant to these rules, the directorSecretary 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.p.1. Where the disqualifying individual is the owner of any equity interest or interest in the debt liability of the permittee or applicant, that person 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 directorSecretary's discretion may allow for divestiture over a period of time not to exceed one (1) year.

3.14.p.2. 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.p.3. Before the directorSecretary 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 directorSecretary 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) must be submitted with the affidavit.

3.14.q. Confidential Information. -- Any

information received pursuant to subsection 3.14 of this rule must be kept confidential by the Division Department to the extent allowable by state law including W. Va. Code §29B-1-1 et seq.

3.14.r. Convicted Persons Generally. -- No permittee may knowingly hire as an officer or directorSecretary any person who has been convicted of any of the offenses enumerated in W. Va. Code §22-15-5©) without first submitting a background investigation disclosure statement to and obtaining the approval of the directorSecretary. No permittee shall knowingly allow any person who has been convicted of any of the crimes enumerated in W. Va. Code §22-15-5©) to acquire an equity interest or debt liability interest without first submitting a background investigation disclosure statement to and obtaining the approval of the directorSecretary.

3.14.r.1. In connection with any such request, the permittee must file with the directorSecretary 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.r.2. The directorSecretary may consider whether the person has affirmatively demonstrated rehabilitation, and may consider the factors set forth in determining whether to grant permission to the permittee to employ the person or allow him or her to acquire an interest in the permit.

3.14.r.3. Any permittee that violates the provisions of subsection 3.14 of this rule may be subject to having its permit revoked, notwithstanding the rehabilitation of the individual in question.

3.14.r.4. Mitigation and Restitution. -- In the case of persons convicted of violating the criminal provisions of any federal or state environmental statute, regulation, or rule, or

persons convicted of any crime which involved the violation of such statutes regulations, or rules, the ~~director~~Secretary will not consider such person rehabilitated unless that person 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 requirements for such treatment as set out in W. Va. Code §§22-1-1 et seq., 22-11-1 et seq., 22-12-1 et seq. and 22-15-1 et seq. and any rules promulgated thereunder. For the purposes of subsection 3.15 of this rule only, the requirements in 46CSR1, as amended, are hereby incorporated by reference. For landfills a single permit must be issued pursuant to subdivision 3.5.b of this rule.

3.16. Specific Application and Permitting Requirements.

3.16.a. Requirements for Landfills. -- The applicant must submit all information required by this rule, as applicable, in order for an application to constitute an administratively complete application.

3.16.b. Requirements for Incinerators.

3.16.b.1. General Requirements. -- The applicant must submit the following information to the ~~director~~Secretary 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 W. Va. Code §22-15-19 with the single exception of pilot projects.

3.16.b.1.A. All information required under subdivisions 3.7.a through 3.7.l, paragraph 3.7.m.1 and subdivisions 3.7.o, 3.7.p, and 3.8.i,

subsection 3.9, paragraphs 3.10.a.8, and 3.10.a.9, and subsections 3.13, 3.14, and 3.15 of this rule;

3.16.b.1.B. Detailed drawings of waste storage areas and cleanup areas showing drainage schemes;

3.16.b.1.C. Recordkeeping procedures;

3.16.b.1.D. A waste management plan describing the handling and storage of the incoming waste and the disposition of the ash and other wastes, alternative disposal options, screening procedures and handling options for screened waste, and cleanup procedures;

3.16.b.1.E. Dust control procedures;

3.16.b.1.F. A waste characterization plan;

3.16.b.1.G. A contingency plan indicating firefighting equipment, communication procedures with community agencies, and arrangements for emergency assistance; and

3.16.b.1.H. A start-up schedule.

3.16.b.2. Required Permits. At a minimum, two (2) permits will be required for incinerator facilities:

3.16.b.2.A. A permit from the West Virginia ~~Division~~ Department of Environmental Protection, ~~Office~~ Division of Air Quality; and

3.16.b.2.B. A solid waste permit for solid waste storage areas and support facilities from the West Virginia ~~Division~~ Department of Environmental Protection.

3.16.b.3. Exemptions.

3.16.b.3.A. Except for those facilities handling special wastes as provided in subsection 4.13 of this rule, incinerators having

a design capacity of five hundred (500) pounds per hour or less are exempt from the permitting requirements of ~~subsection subdivision 3.16~~ 3.16.b of this rule. However, such an incinerator must be designed and operated to meet the performance standards of ~~section 5 subsection 5.1~~ section 5 subsection 5.1 of this rule and with all appropriate ~~applicable regulations or rules of the West Virginia Office Division of Air Quality.~~ applicable regulations or rules of the West Virginia Office Division of Air Quality.

3.16.b.3.B. Incinerators burning only clean wood waste are exempt from all permitting requirements of ~~subsection 3.16~~ 3.16.b of this rule. However, such incinerators must be designed and operated to meet the performance standards of ~~section 5 5.1~~ section 5 5.1 of this rule and with all appropriate regulations or rules of the West Virginia Office Division of Air Quality;

3.16.c. Requirements for Transfer Stations.

3.16.c.1. General Requirements. -- The applicant must submit the following information to the ~~director~~Secretary in order to obtain a permit for a transfer station:

~~3.14.c.1.A.~~ 3.16.c.1.A. All information required under subdivisions 3.7.a through 3.7.l, and subdivisions 3.7.o, 3.7.p, ~~3.8.q,~~ 3.8.a, and 3.8.i, subsections 3.9, 3.13, 3.14, and 3.15 of this rule;

3.16.c.1.B. A description of the solid waste storage or loading areas;

3.16.c.1.C. A description of the areas of land for which a bond will be posted;

3.16.c.1.D. The location and use of buildings and related facilities which will be used in the operation; and

3.16.c.1.E. The location of scales and weigh stations to be used in the operation.

3.16.c.2. Operations Plan. -- An application to conduct transfer station activities must include an operations plan that includes the following:

3.16.c.2.A. A narrative description of the general operating plan for the proposed facility including:

3.16.c.2.A.1. The source, composition, and weight or volume of solid waste that is proposed to be received at the facility;

3.16.c.2.A.2. The proposed operating and receiving hours for the facility;

3.16.c.2.A.3. The process to be used at the facility;

3.16.c.2.A.4. The daily operational methodology of the proposed process;

3.16.c.2.A.5. The loading rate;

3.16.c.2.A.6. The proposed capacity of the facility; and

3.16.c.2.A.7. The expected life of the facility.

3.16.c.2.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.c.2.C. A plan for training equipment operators and other personnel in the design and operation of the facility.

3.16.c.3. Plan for Access Roads. -- An application to conduct transfer station activities must contain designs, cross-sections, and specifications for access roads, including load limits, in accordance with subdivision 4.5.c of this rule.

3.16.c.4. Stormwater, Soil Erosion, and Sedimentation Control Plan. -- An application to conduct transfer station activities must

include a plan to manage surface storm water soil erosion and sedimentation control during the various phases of construction and operation on the permit area. Calculations indicating water quantities must be based on the 25-year, 24-hour storm event. The plan 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 must be included in the plan.

3.16.c.5. Groundwater Monitoring Plan. -- If required by the ~~director~~Secretary, the applicant must submit a groundwater monitoring plan to detect contamination, degradation or pollution of groundwater from the facility.

3.16.c.6. Soil Monitoring Plan. -- If required by the ~~director~~Secretary, the applicant must submit a soil monitoring plan, capable of detecting soil contamination from the facility.

3.16.c.7. Nuisance Control Plan. -- An application to conduct transfer station activities 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 must provide for the routine assessment of vector infestation and must also provide for counter measures. The plan may include a control program involving a contractual arrangement for services with an exterminator.

3.16.c.8. Litter Control Plan. -- An application to conduct transfer station activities must contain a plan to control litter.

3.16.c.9. Contingency Plan. -- An application to conduct transfer station activities must contain a contingency plan relating to emergency procedures, hazard prevention, emergency equipment, and the implementation of the contingency plan.

3.16.d. Requirements for Recycling Facilities.

3.16.d.1. 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 must provide notice and obtain a permit in accordance with the provisions of subdivision 3.16.d of 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 W. Va. Code §22-15-2 "Recycling facility."

3.16.d.1.A. Recycling facilities existing on May 1, 1990 are considered to have a valid permit from the ~~Division~~ Department if the requirements of paragraph 3.16.d.2 of this rule is met.

3.16.d.1.B. Recycling facilities which are developed after May 1, 1990 are considered to have a valid permit from the ~~Division~~ Department upon fulfilling the requirements of paragraphs 3.16.d.2 and 3.16.d.3 of this rule.

3.16.d.2. Notification of Activity.

3.16.d.2.A. Existing Qualifying Recycling Facilities. -- Any existing recycling facility which qualifies for a permit under paragraph 3.16.d.1 of this rule must notify the ~~director~~Secretary of its existence.

3.16.d.2.B. New Qualifying Recycling Facilities. -- Any new recycling facility which qualifies for a permit under paragraph 3.16.d.1 of this rule must notify the ~~director~~Secretary of its existence prior to installation, establishment, construction, modification, or operation of the recycling facility.

3.16.d.2.C. Form of Notification. -- Notification required by paragraph 3.16.d.2 of this rule must be made to the ~~director~~Secretary on forms and in the manner prescribed by the ~~director~~Secretary.

3.16.d.3. Recycling Facility Requirements.
-- Except as provided under paragraph 3.16.d.4 of this rule, all persons owning or operating a recycling facility must:

3.16.d.3.A. Comply with the applicable prohibitions and location standards listed under subsections 3.1 and 3.2 of this rule;

3.16.d.3.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.d.3.C. Post a sign in conformance with subparagraph 4.6.a.1.M of this rule;

3.16.d.3.D. Construct and maintain adequate shelter and sanitary facilities for all personnel;

3.16.d.3.E. Construct and maintain adequate drainage systems to prevent freestanding storm water;

3.16.d.3.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 W. Va. Code §22-11-1 et seq. or the regulations and rules promulgated thereunder;

3.16.d.3.G. All operations must be conducted within enclosed structure(s);

3.16.d.3.H. Receiving or storing of any hazardous waste material at a recycling facility is strictly prohibited;

3.16.d.3.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.d.3.J. All materials not used in the recycling process must be properly disposed of;

3.16.d.3.K. No material may be stored for more than sixty (60) days without written approval by the ~~director~~Secretary;

3.16.d.3.L. All materials received by the facility must be accurately weighed or otherwise measured in accordance with the provisions of 110CSR6A subsections 4.2 and 4.3.

3.16.d.4. Other Recycling Exemptions. -
- The following recycling activities are not required to obtain a solid waste permit pursuant to this rule:

3.16.d.4.A. Nonprofit organizations accepting source-separated materials; and

3.16.d.4.B. Returnable container redemption centers operated by a dealer or distributor.

3.16.d.5. Resource Recovery Permitting Requirements. (Reserved)

3.16.d.6. Other Recycling Requirements. (Reserved)

3.16.e. Permitting Requirements for Construction/Demolition Class D-1 and Class D Landfills.

3.16.e.1. General Requirements. -- All ~~construction/demolition Class D-1 and Class D~~ landfills must apply for and receive approval from the ~~director~~Secretary ~~director~~Secretary prior to operation unless otherwise specified by subdivision 3.16.e of this rule. Notwithstanding the provisions of subdivision 3.16.e of this rule, a Class D-1 solid waste facility which qualifies as a commercial solid waste facility pursuant to W. Va. Code §22-15-1 et seq. is required to meet all appropriate applicable landfill requirements specified by this rule.

3.16.e.2. Exemptions.

3.16.e.2.A. Land Clearing Exemption.

The disposal of trees, stumps, woodchips, and yard waste generated from land clearing when generation and disposal occur on the same property and the disposal area is less than one-half acre is exempt from the permitting requirements of this rule.

3.16.e.2.B. One-half Acre Exemption.

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 permitting requirements of this rule when generation and disposal occur on the same property, 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~~ This exemption for landowners does not apply to multiple one-half acre sites on the same parcel of land.

3.16.e.2.C. Clean Waste Concrete and Masonry Substances Exemption. – The legitimate beneficial reuse of clean waste concrete/masonry substances for the purpose of structural fill or roadbase material is exempt from the permitting requirements of this rule.

3.16.e.3. Class D-1 Solid Waste Facilities.
-- A Class D-1 solid waste/facility permit must be ~~obtained~~ applied for the disposal of construction/demolition waste in cases where a noncommercial Class D solid waste facility general permit specified by paragraph 3.16.e.4 is not applicable.

3.16.e.3.A. Except as provided in parts 3.16.e.3.A.1 through 3.16.e.3.A.4 ~~of this rule~~, an applicant for a Class D-1 solid waste facility permit must meet all of the requirements in section 3 ~~of this rule~~.

3.16.e.3.A.1. In lieu of the test corings required in subdivision 3.8.c ~~of this rule~~, available literature and field reconnaissance may be used to obtain the information required in subdivision 3.8.c of this rule.

3.16.e.3.A.2. A minimum of one (1) downgradient monitoring well 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 be drilled. If the permit area is greater than ten (10) acres, a minimum of three (3) monitoring wells must be drilled.

3.16.e.3.A.3. Class D-1 solid waste facilities are exempted from the requirements of subparagraph 3.8.d.4.A and parts 3.8.c.1.C.4, and 3.8.c.1.C.9 of this rule.

3.16.e.3.A.4. Upon written request, the ~~director~~Secretary may exempt a Class D-1 solid waste facility from compliance with a specific requirement in section 3 of this rule that the ~~director~~Secretary deems to be inappropriate or may modify such requirement for that particular facility.

3.16.e.4. Class D General Permit.

3.16.e.4.A. Coverage. -- The ~~director~~Secretary may issue a general permit to regulate noncommercial construction/demolition solid waste facilities except those covered by individual Class D permits.

3.16.e.4.B. Administration. -- General permits may be modified, revoked, reissued or suspended in accordance with the applicable requirements of subsection 3.18 of this rule. Only one (1) Class D landfill may be located per 10 acre site. In no circumstance may a Class D facility be located within 200 feet of another solid waste facility.

3.16.e.4.B.1. The ~~director~~Secretary 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 part. Cases where an individual permit may be required include the following:

3.16.e.4.B.1(a) The permittee is

not in compliance with the conditions of the general permit;

3.16.e.4.B.1.(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.e.4.B.1.(c) Specific regulations or rules are promulgated for solid waste facilities covered by the general permit.

3.16.e.4.B.2. The directorSecretary may require any owner or operator authorized by a general permit to apply for an individual permit as provided in part 3.16.e.4.B.1 of this part rule, only if the owner or operator has been notified in writing that a permit application is required. This notice shall must 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 will automatically terminate. The directorSecretary may grant additional time upon request of the applicant.

3.16.e.4.B.3. 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 must submit an application under subsection 3.5 with reasons supporting the request, to the directorSecretary, no later than ninety (90) days after the general permit notice in accordance with subsection 3.21.

3.16.e.4.B.4. Upon issuance of a general permit, the directorSecretary shall will 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.

3.17. Draft Permit.

3.17.a. Once an application is complete, the directorSecretary must tentatively decide whether to prepare a draft permit or to deny the application.

3.17.a.1. If the directorSecretary tentatively decides to issue a general permit, he or she shall will prepare a draft general permit that shall will contain the following information:

3.17.a.1.A. All conditions under subsections 3.5 and 3.6 and subdivision 5.4.c;

3.17.a.1.B. Permit application requirements;

3.17.a.1.C. All compliance schedules;

3.17.a.1.D. All limitations, standards, prohibitions and conditions, and all variances that are to be included.

3.17.b. If the directorSecretary decides to prepare a draft permit, a draft permit must be prepared that contains the following information:

3.17.b.1. All conditions required under section 3 and other applicable sections of this rule.

3.17.b.2. All compliance schedules; and

3.17.b.3. Standards for treatment, storage, and disposal and other permit conditions under section 4 and/or 5 of this rule.

3.17.c. A fact sheet will be prepared by the directorSecretary for every draft permit for each solid waste facility or activity and for every general permit. The fact sheet must briefly set forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. The directorSecretary will send this fact sheet to the applicant and, upon request, to any other person.

3.17.d. The fact sheet must include, when applicable:

3.17.d.1. A brief description of the type of facility or activity which is the subject of the draft permit.

3.17.d.2. 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 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.d.3. A brief summary of the basis for the draft permit conditions including references to applicable statutory or regulatory provisions.

3.17.d.4. A rationale explaining why any requested variances or alternatives to required standards do or do not appear justified.

3.17.d.5. A description of the procedures for reaching a final decision on the draft permit including:

3.17.d.5.A. The beginning and ending dates of the comment period and the address where comments will be received;

3.17.d.5.B. The procedures for requesting a hearing and the nature of that hearing; and

3.17.d.5.C. Any other procedures by which the public may participate in the final decision.

3.17.d.6. The name and telephone number of a person to contact for additional information.

3.18. Permit Modification, Reissuance, Suspension, and Revocation and Termination.

3.18.a. Actions by the directorSecretary.

3.18.a.1. Permits may be modified,

revoked, reissued, suspended, or revoked, or terminated by the directorSecretary for the reasons specified in subsection 3.18 of this rule.

3.18.a.1.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.a.1.B. The directorSecretary may require additional information and, in the case of a major modification, may require submission of a new permit application.

3.18.a.2. If the directorSecretary tentatively decides to modify a permit, the directorSecretary will prepare a modified draft permit and will follow the public notice procedures in subsection 3.21 of this rule. The directorSecretary may request additional information or require the submission of an updated permit application from the applicant.

3.18.b. Causes for Modification or Permittee-Requested Reissuance of Permits.

3.18.b.1. Minor Modification. -- Permits may be modified by the directorSecretary at any time except for major modifications as listed in paragraph 3.18.b.2 of this rule. Minor modification does not require the preparation of a draft permit or the completion of the public notice procedures.

3.18.b.1.A. A minor modification may be approved by the directorSecretary for a permittee proposing to increase the volume of solid waste accepted at the 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.b.2. 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 this rule unless an emergency is declared by the ~~director~~Secretary.

3.18.b.2.A. The performance, efficiency, or longevity of the liner system or the final cover (cap) will be decreased;

3.18.b.2.B. The efficiency or performance of the leachate management system will be decreased;

3.18.b.2.C. The efficiency or performance of a gas management system will be decreased;

3.18.b.2.D. The efficiency or performance of the surface water control system will be decreased;

3.18.b.2.E. A decrease in the quality or quantity of data from any environmental monitoring system will occur;

3.18.b.2.F. The permitted disposal surface area boundary will be increased;

3.18.b.2.G. A remedial action to protect groundwater is necessary;

3.18.b.2.H. The permit is to be transferred to a new permittee; or

3.18.b.2.I. Other similar modifications as determined by the ~~director~~Secretary.

3.18.b.2.J. Definitions. - For the purposes of this part:

3.18.b.2.J.1. "Similar Modification," means those modifications which have a significant potential impact upon the environment, human health and safety, and those parameters set out in W. Va. Code §22-15-8-©). Similar modifications also include those modifications which have a significant potential impact upon the operation and management of a commercial solid waste facility.

3.18.b.2.J.2. "Significant potential impact," is defined as that which is adverse or substantial.

3.18.c. Permit Suspension, Termination or Revocation.

3.18.c.1. Suspension. -- A solid waste facility permit may be suspended by order of the ~~director~~Secretary for any of the following reasons:

3.18.c.1.A. Violation of the Act, this rule or any order of the ~~director~~Secretary issued thereunder;

3.18.c.1.B. Interference with a representative of the ~~director~~Secretary in the performance of the ~~director~~Secretary's duties;

3.18.c.1.C. Failure to adhere to the terms and conditions of the permit or any order issued by the ~~director~~Secretary under this rule the Act; or

3.18.c.1.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.c.2. Revocation. A solid waste facility permit may be revoked by order of the ~~director~~Secretary for any of the following reasons:

3.18.c.2.A. Any deficiency at the solid waste facility constituting an imminent pollution, health, or safety hazard;

3.18.c.2.B. Persistent violation of this rule, permit terms and conditions, or orders issued by the ~~director~~Secretary under the Act or this rule;

3.18.c.2.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.c.2.D. Any cause which would require disqualification pursuant to this rule from receiving a permit upon original application.

3.18.c.3. Effect of Permit Suspension, Termination or Revocation.

3.18.c.3.A. Suspension. -- All solid waste processing, recycling, or disposal activities and the receipt of any solid waste at the solid waste facility 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.c.3.A.1. Should the Secretary deem that there are potentially significant health and/or environmental problems an order of suspension may be issued and the bond may be seized and utilized for remediation purposes.

3.18.c.3.B. Revocation. -- All solid waste processing, recycling, or disposal activities and the receipt of any solid waste at the solid waste facility must cease immediately upon receipt of an order of revocation. The solid waste facility owner 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.c.3.C. Termination. -- After the effective date of this rule, a solid waste facility permit may be terminated by the director/Secretary for any of the following reasons:

3.18.c.3.C.1. Failure of the Permittee to initiate construction of the permitted facility within 180 days of permit issuance, provided that a permittee notified by the Secretary of pending termination, may request and be granted an extension of time to initiate construction by providing information that demonstrates that construction will be initiated within the

remaining portion of the permit life; or

3.18.c.3.C.2. A written request by the permittee to terminate the permit because the permittee cannot, or opts not to initiate construction or continue the operation of a permitted facility.

3.18.c.3.C.3. A permittee whose permit has been terminated by the Secretary prior to construction or operation may request that the full amount of the solid waste facility financial assurance be refunded.

~~3.18.c.3.C.~~ 3.18.c.3.D. Environmental Monitoring and Control. -- Environmental monitoring and control activities specified in an order of suspension or in an order of revocation 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.a. Transfer Requirements -- A permit issued by the ~~director~~Secretary in accordance with the provisions of this rule may be transferred to another person. The person seeking to succeed to the rights granted by the permit must:

3.19.a.1. File a completed application with the ~~director~~Secretary on forms and in a manner prescribed by the ~~director~~Secretary, including background investigation disclosure statements as required by subsection 3.14 of this rule;

3.19.a.2. Provide performance bond coverage at least equal to that of the original permit in accordance with subsection 3.13 of this rule. It must be affirmatively demonstrated to the ~~director~~Secretary 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.a.3. Provide for public notice in

accordance with subsection 3.21 of this rule; and

3.19.a.4. Obtain the ~~director~~Secretary's approval for the transfer of permit in writing.

3.19.b. Denial of Transfer. -- The ~~director~~Secretary 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 must be made in writing giving reasons therefor.

3.19.c. 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~~Secretary. Such party permittee must complete background investigation disclosure statement(s) as required under subsection 3.14 of this rule.

3.20. Permit Renewal.

3.20.a. Application for Permit Renewal. -- An application for the renewal of a valid permit that proposes no major modification to the permit must be on forms prescribed by the ~~director~~Secretary and must contain the following:

3.20.a.1. The name and address of the permittee, location of the permit area including the county, and the permit number;

3.20.a.2. A statement that the terms and conditions of the permit are being satisfactorily met;

3.20.a.3. 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.a.4. A statement that the performance bond or other financial assurance for the operation will continue in effect.

3.20.a.5. A progress map of the same size and scale as the proposal map;

3.20.a.6. A certification that the information set forth in the form and progress map is true, accurate, and complete; and

3.20.a.7. A notarized signature of the principal officer of the permittee in accordance with subdivision 3.7.r of this rule.

3.20.b. Public Notice. -- An applicant seeking to renew a valid permit who does not propose any major modification to that permit must meet the public notice requirements of subsection 3.21 of this rule. The ~~Division~~Department will receive comments only upon the contents of the application for renewal. A public hearing may be held at the discretion of the ~~director~~Secretary.

3.20.c. Modification and Renewal. -- If an application is received which proposes a major modification to the existing permit and the renewal of that permit, it will be treated as a major modification pursuant to paragraph 3.18.b.2 of this rule in addition to the requirements of subsection 3.20 of this rule.

3.21. Public Notice.

3.21.a. Scope.

3.21.a.1. Public notice must be given whenever either of the following actions have occurred:

3.21.a.1.A. A draft permit has been prepared; or

3.21.a.1.B. A hearing has been scheduled under subsection 3.23 of this rule.

3.21.b. Timing.

3.21.b.1. Public notice of the preparation of a draft permit 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 ~~director~~Secretary for good cause shown but in no case may the further extension exceed an additional thirty (30) days.

3.21.b.2. Public notice of a public hearing 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.b.3. A notice required under subsection 3.21 of this rule may be combined with that notice required under W. Va. Code §22-11-1 et seq.

3.21.c. Methods. -- Public notice must be given by the following methods:

3.21.c.1. By mailing a copy of a notice to those persons whose names are included on a mailing list maintained by the ~~Division~~Department.

3.21.c.2. By the ~~director~~Secretary publishing the public notice as a Class II legal advertisement in a qualified newspaper, as defined in W. Va. Code §59-3-1-1 et seq., serving the county, or counties where the facility will be located. The ~~director~~Secretary 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 ~~Division~~Department within twenty (20) days after publication.

3.21.c.3. 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.d. Contents.

3.21.d.1. Public Notice Contents. -- All public notices issued under subsection 3.21 of

this rule must contain the following information:

3.21.d.1.A. The name and address of the Division processing the permit action for which notice is being given;

3.21.d.1.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.d.1.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.d.1.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.d.1.E. A brief description of the comment procedures required by subdivision 3.21.b of 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.d.1.F. A general description of the location of the proposed permit area including streams;

3.21.d.1.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 on the map and such lines will cross at or near the center of the proposed permit area; and

3.21.d.1.H. A description of the

activities covered in the application, including the class of the solid waste facility, the types, amounts, and sources of solid wastes to be handled, site improvements, and solid waste handling methods.

3.21.d.2. Other Public Notice Information.

-- In addition to the contents required under paragraph 3.21.d.1 of this rule, public notices for hearings must contain the following information:

3.21.d.2.A. A reference to the date of previous public notices relating to the permit;

3.21.d.2.B. The date, time, and place of the hearing; and

3.21.d.2.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.a. During the public comment period provided under subdivision 3.21.b of 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 must be in writing and must state the nature of the issues proposed to be raised in the hearing. All comments must be considered in making the final decision and must be answered as provided in subsection 3.27 of this rule.

3.23. Public Hearings.

3.23.a. The directorSecretary will hold a public hearing in the vicinity of the proposed facility whenever the directorSecretary finds, on the basis of requests, a significant degree of public interest on issues relevant to the draft permit. The directorSecretary 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.b. 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 will automatically be extended to ten (10) days after the close of any public hearings under subsection 3.23 of this rule.

3.23.c. A tape recording or written transcript of the hearing will be made available to the public, upon request.

3.24. Reopening of the Public Comment Period.

3.24.a. 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 directorSecretary determines to revise any condition of the permit that had been sent to initial public notice, the directorSecretary must take one or more of the following actions:

3.24.a.1. Prepare a new draft permit.

3.24.a.2. Reopen or extend the public comment period to give interested persons an opportunity to comment on the information or arguments submitted.

3.24.a.3. Conduct a public hearing.

3.24.b. Comments filed during the reopened comment period will be limited to the substantial new questions that caused its reopening. The public notice 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 must maintain a public participation file. The file 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 must clearly address each point in each comment letter including any actions taken by the applicant to address the comment. The response letters must be sent by certified mail and the signed return receipts must also be included in the public participation file. The complete public participation file must be submitted to the ~~director~~Secretary by the applicant, within thirty (30) days of the end of the public comment period designed in the public notice. The ~~director~~Secretary 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 ~~shall~~ must be governed by the provisions of W. Va. Code §29B-1-1 et seq.

3.27. Issuance and Effective Date of Permit.

3.27.a. After the close of the public comment period on a draft permit, the ~~director~~Secretary must issue a final permit decision. The ~~director~~Secretary must provide written notification of the decision to the applicant and to each person requesting notice of the final permit decision. For the purposes of subsection 3.27 of this rule, a "final permit decision" means the final decision of the ~~director~~Secretary to issue, deny, modify, suspend, revoke, reissue, or terminate a permit.

3.27.b. If the final permit decision is to deny, suspend, revoke, modify, or terminate a permit, the ~~director~~Secretary must provide the reasons therefor in the ~~director~~Secretary's written notification to the applicant. This notification will also include reference to the procedures for appealing the final permit decision.

3.27.c. A final permit decision 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 ~~director~~Secretary.

3.27.d. The Secretary may terminate the permit without compensation to the permittee, after the effective date of this rule, if a permittee has not begun construction within six (6) months of the issuance of a new solid waste facility permit; or fails to make continual significant progress towards completion of construction.

3.28. Permit Review by the ~~director~~Secretary.

3.28.a. The ~~director~~Secretary may refuse to grant a permit in accordance with the provisions of W. Va. Code §22-15-5©). Written notification of such a refusal, and the reasons therefor, will be provided to the applicant.

3.28.b. Within thirty (30) days of receipt of a permit application, compliance schedule, closure plan, or major modification application, the ~~director~~Secretary will determine whether such application, schedule, or plan is complete (i.e., in proper order for technical review to commence) and will notify the applicant of the determination in writing. If the ~~director~~Secretary determines that such application, schedule, or plan is not complete, the notification will advise the applicant of the deficiencies that require remedy.

3.29. Appeals. -- Appeal of permit decisions must be conducted in accordance with the provisions of W. Va. Code §22-15-16.

§33-1-4. Landfill Performance Standards.

4.1. Enforcement of Landfill Performance Standards. -- Enforcement of the performance standards in section 4 of this rule must be conducted in accordance with the provisions of W. Va. Code §22-15-1 et seq.

4.2. Solid Waste Assessment Fees. -- Permittees are required under the provisions of W. Va. Code §22-15-11 and 110CSR6A of the W. Va. Department of Tax and Revenue to pay solid waste assessment fees.

4.3. Landfill Manager Training and Certification.

4.3.a. 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 subdivision 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~~Secretary.

4.3.b. Applicability. -- Individuals in responsible charge of existing or new landfills and new individuals in responsible charge of existing landfills must be certified landfill managers by attending and successfully completing a course of instruction.

4.3.c. 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.d. 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.d.1. 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. Operating Record. -- Every facility must develop and maintain, on site, or at an alternative location approved by the ~~director~~Secretary an operating record that contains the information listed in this subsection. New facilities must have a record in place on the first day of business operations. The record must include a table of contents which outlines, by section, title and page number, the discussion required by this rule.

4.4.a. General Information. -- The items listed in this subdivision 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.a.1. The facility title;

4.4.a.2. The engineering consultants;

4.4.a.3. The name and address of the facility owner and the name of the facility operator, the permit holder or permittee;

4.4.a.4. The location of the facility by latitude and longitude and county;

4.4.a.5. The proposed area of waste fill;

4.4.a.6. The anticipated life of the facility and its disposal capacity;

4.4.a.7. The waste contributors, including all municipalities and major commercial and industrial customers;

4.4.a.8. The waste type and quantity and source to be disposed; and

4.4.a.9. Any exemptions requested from the ~~Division~~ Department .

4.4.b. Monitoring. -- The 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 subsection 4.4 of this rule, including:

4.4.c. Operations. -- The record must describe the daily operations of the facility including a discussion of the following items:

4.4.c.1. The timetable for the phases of facility development;

4.4.c.2. The waste types accepted or excluded;

4.4.c.3. Typical waste handling techniques, and methods for handling unusual waste types;

4.4.c.4. Procedures for excluding the receipt of hazardous waste;

4.4.c.5. The hours of operation;

4.4.c.6. Traffic routing;

4.4.c.7. Drainage and erosion controls;

4.4.c.8. Windy, wet, and cold weather disposal operations;

4.4.c.9. Fire protection equipment;

4.4.c.10. Anticipated staffing requirements;

4.4.c.11. Methods for disease vector, dust, and odor control;

4.4.c.12. Daily clean-up;

4.4.c.13. Direction of filling;

4.4.c.14. Salvaging;

4.4.c.15. Recordkeeping and reporting requirements as follows:

4.4.c.15.A. The permittee must record, retain and maintain copies of the documents listed in this subparagraph in the facility operating record, and all information contained in the operating record must be furnished upon request to the ~~director~~Secretary or be made available at all reasonable times for inspection by the ~~director~~Secretary. Those documents include, but are not limited to the following:

4.4.c.15.A.1. Any location standard demonstrations required by subsections 3.1 and 3.2 of this rule;

4.4.c.15.A.2. A listing of any inspection records, training procedures, and notification procedures required by subparagraph 4.6.a.1.F of this rule;

4.4.c.15.A.3. Gas Monitoring results from monitoring and any remediation plans developed in accordance with subsection 4.10 of this rule;

4.4.c.15.A.4. Design documentation for the placement of leachate or gas condensate in the SWLF as required by subdivision 4.13.c of this rule;

4.4.c.15.A.5. Any demonstration, certification, finding, monitoring, testing, or analytical data required by subsection 4.11 of this rule;

4.4.c.15.A.6. Any closure and post-closure care plans and any monitoring, testing or analytical data as required by subsection 4.11 and/or section 6 of this rule.

4.4.c.15.A.7. Any cost estimates and financial assurance documentation required by subdivision 3.7.j and subsection 3.13 of this rule,

4.4.c.15.A.8. Any other demonstration, certification, finding, monitoring, testing, or analytical data required by this rule;

4.4.c.15.B. Alternative Recordkeeping.

4.4.c.15.B.1. The ~~director~~Secretary can set alternative schedules for recordkeeping and notification requirements as specified in subdivisions 4.4.c, except for the notification requirements in paragraph 3.2.g.2 and subparagraph 4.11.c.7.a.

4.4.c.16. Parking for visitors, users, and employees;

4.4.c.17. A listing of the backup equipment available; and

4.4.c.18. A listing of local emergency response personnel.

4.4.d. 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, long-term post-closure care and other similar design features.

4.4.e. Appendix. -- An appendix 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.a. 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.b. Drainage and Sediment Control Plan.

4.5.b.1. Stream Channel Diversions.

4.5.b.1.A. Design Capacity.

4.5.b.1.A.1. The design capacity of channels for temporary and permanent channel diversions must be at least equal to the capacity of the unmodified stream channel immediately upstream and downstream of the diversion.

4.5.b.1.A.2. The temporary and permanent channel diversions must be designed so that the combination of channel, bank, and floodplain configuration is adequate to pass safely the peak runoff of a ~~10-year~~, of a 25-year, 24-hour storm for a temporary channel diversion and a 100-year, 24-hour storm for a permanent channel diversion.

4.5.b.1.B. Removal of Temporary Diversions. -- Temporary channel diversions 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.b.1.C. Stream Channel Specifications. -- The drainage and sediment control plan must contain the following plans, design data, and specifications concerning stream channels:

4.5.b.1.C.1. A "stream channel design computation sheet" to be completed for each proposed temporary or permanent stream channel diversion;

4.5.b.1.C.2. Construction plans showing:

4.5.b.1.C.2.(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.b.1.C.2.(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.b.1.C.2.(c) A cross-section showing original ground limits, bottom width, side slopes, depth of flow, floodplain configuration; and

4.5.b.1.C.2.(d) A detailed sequence of the installation of temporary or permanent stream channel diversions;

4.5.b.1.C.3. Construction specifications; and

4.5.b.1.C.4. Maintenance schedule and procedures for maintenance.

4.5.b.2. Diversions.

4.5.b.2.A. Run-on Control System.

4.5.b.2.A.1. Permittees of all SWLFs must design, construct, operate, and maintain:

4.5.b.2.A.2. 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.b.2.B. Design Capacity. -- ~~Diversions~~ The run-on control system must have the capacity to pass safely the peak discharge from the contributing watersheds from a 25-year, 24-hour storm.

4.5.b.2.C. Diversion Specifications. -- The drainage and sediment control plan must contain the following plans, design data, and specifications concerning diversions:

4.5.b.2.C.1. A "Diversion Design Computation Sheet" must be completed for each proposed diversion;

4.5.b.2.C.2. Construction plans showing:

4.5.b.2.C.2.(a) A profile based upon survey along the centerline of the diversion showing original ground line and proposed diversion bottom;

4.5.b.2.C.2.(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.b.2.C.2.(c) The type of soil in which the diversion will be excavated. Either the soil must be sampled and classified at intervals of five hundred (500) feet or a demonstration of erosion potential based on existing soils information must be made; and

4.5.b.2.C.2.(d) The type and design of the outlet proposed for each diversion;

4.5.b.2.C.3. Maintenance schedule and procedures for maintenance; and

4.5.b.2.C.4. Construction and vegetation specifications.

4.5.b.3. Sediment Control. -- Sediment control structures must be constructed in appropriate locations in order to control sedimentation. All runoff from the disturbed area must pass through a sedimentation pond or ponds. All sediment control structures must be designed, constructed, and maintained in accordance with the specifications contained in the U.S. Soil Conservation Service's "Erosion and Sediment Control Handbook for Developing Areas in West Virginia" unless the ~~director~~ Secretary approves the use of an equivalent handbook of guidance, or as otherwise specified in this rule. Temporary

erosion and sediment control measures must be implemented during construction until permanent sedimentation control can be established.

4.5.b.3.A. Design and Construction Requirements.

4.5.b.3.A.1. All sediment control structures 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 must be indicated on "as-built" plans showing the approved design, the changes made, and surveyed reference points. All "as-built" plans must be submitted to the ~~director~~Secretary.

4.5.b.3.A.2. All sediment control structures must be located as near as possible to the disturbed area. All sediment control structures must be located out of perennial streams unless otherwise approved by the ~~director~~Secretary.

4.5.b.3.A.3. All sediment control structures must have a sediment capacity of 0.125 acre-feet 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 W. Va. Code §22-11-1 et seq., and any rules promulgated thereunder.

4.5.b.3.A.4. All discharges from sediment control structures must not cause a violation of state and federal water quality standards and must meet all effluent limitations

as reflected in W. Va. Code §22-11-1 et seq., and any rules promulgated thereunder.

4.5.b.3.A.5. All sediment control structures must be designed, constructed, and maintained to prevent short-circuiting.

4.5.b.3.A.6. All sediment control structures must be cleaned out when the sediment accumulation reaches sixty percent (60%) of the design sediment capacity. The clean-out elevation must be indicated on the plans submitted for the structure. Sediment removal and disposal must be done in a manner that minimizes adverse effects on surface water and groundwater quality.

4.5.b.3.A.7. All sediment control structures must be designed, constructed, and maintained to meet the following safety standards:

4.5.b.3.A.7.(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 must be free of trees, roots, brush, frozen soil, organic materials, coal processing materials, construction waste, and other debris. All earthen materials must be properly compacted to prevent excessive settlement.

4.5.b.3.A.7.(b) Sediment control structures must provide a combination of principal and emergency spillways that will safely discharge a minimum 25-year, 24-hour storm 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 a natural drainway to prevent erosion of the downstream toe.

4.5.b.3.A.7.(c) The contributing drainage area(s) for a sediment control

structure must not exceed 200 acres.

4.5.b.3.A.7.(d) The minimum diameter of the principal spillway and the discharge conduit must be twelve (12) inches.

4.5.b.3.A.7.(e) A minimum difference in elevation of one (1) foot between the crest of the principal spillway and the crest of the emergency spillway must be provided. A minimum difference in elevation of one (1) foot of freeboard between the maximum design flow elevation in the emergency spillway and the top of the settled embankment must be provided.

4.5.b.3.A.7.(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.b.3.A.7.(g) Appropriate barriers must be provided to control seepage along the conduits that extend through the embankment.

4.5.b.3.A.7.(h) All inspection reports and engineering certifications must be provided to the ~~director~~Secretary.

4.5.b.3.A.7.(i) The sediment control structure must possess a minimum embankment width of ten (10) feet.

4.5.b.3.A.7.(j) The embankment must be designed and constructed with a minimum static safety factor of 1.5.

4.5.b.3.A.7.(k) The embankment must be stabilized and revegetated upon construction.

4.5.b.3.A.8. Sediment control structures must be inspected and closed in accordance with section 6 of this rule.

4.5.b.3.A.9. 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:

4.5.b.3.A.9.(a) Is or will be twenty-five (25) feet or more in height from the natural bed of the 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.b.3.A.9.(b) Is or will be six (6) feet or more in height from the natural bed of the 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 §22-14-1 et seq. is subject to regulation under the provisions of W. Va. Code, §22-14-1 et seq.

4.5.b.3.A.10. Discharge Structures. -- Discharge from temporary or permanent sediment control structures, diversions, or stream channel diversions must be controlled by energy dissipaters, riprap channels or other devices approved by the ~~director~~Secretary to reduce erosion, to prevent deepening or enlargement of stream channels, and to minimize disturbance of the hydrologic balance. Discharge structures must be designed in accordance with standard engineering procedures.

4.5.b.3.B. Abandonment Procedures. -
- Minimum requirements for abandoning sediment control structures prior to total release of a bond are as follows:

4.5.b.3.B.1. 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 must follow the abandonment procedures outlined in part 4.5.b.3.B.2 of this rule.

4.5.b.3.B.2. Embankment-Type

Sediment Control Structures; Embankment-Type Excavated Sediment Control Structures; Crib and Gabion Control Structures. -- Sediment control structures and all accumulated sediment above the structure must be removed from the natural drainway if they are built across it. Sediment control structures adjacent to natural drainways 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. When sediment control structures are removed, the natural drainway must be returned to its original profile and cross-section as near as practical. An original profile and cross-section view for the channel must be submitted with the drainage plan. The channel sides and bottom must be rock riprap. The riprap 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 removal of the sediment control structure and any necessary stream channel work.

4.5.b.3.B.3. Revegetation of Disturbed Areas. -- All areas disturbed during abandonment of a sediment control structure must be seeded and mulched immediately to revegetate and stabilize the disturbed areas.

4.5.b.4. Run-off Control System.

4.5.b.4.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.b.4.B. Run-off from all portions of the landfill, including the active portion must be handled in accordance with W. Va. Code §22-15-1 et seq.

4.5.c. Access Roads.

4.5.c.1. 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) must contain the following:

4.5.c.1.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.c.1.B. A 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.c.1.C. A cross-section of the access road showing culverts and their slopes, fill materials, original ground, ditches, and sediment control devices.

4.5.c.1.D. A structure computation sheet and a cross-section showing all data pertinent to the crossing of each intermittent or perennial stream.

4.5.c.1.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 paragraph 4.5.c.2 of this rule.

4.5.c.1.E.1. All grades referred to in paragraph 4.5.c.2 of this rule must be subject to a tolerance of two percent (2%). All linear measurements referred to in paragraph 4.5.c.2 of this rule must be measured from the horizontal and must be subject to a tolerance of five percent (5%).

4.5.c.1.E.2. 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 of the West Virginia Division of Highways.

4.5.c.2. Access Road Construction.

4.5.c.2.A. Grades. -- The grading of an access road must be such that:

4.5.c.2.A.1. The overall grade must not exceed ten percent (10%).

4.5.c.2.A.2. The maximum pitch grade 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.c.2.A.3. The surface must pitch toward the ditchline at a minimum rate of one-half ($\frac{1}{2}$) inch per foot of surface width or crowned at the minimum rate of one-half ($\frac{1}{2}$) inch per foot of surface width as measured from the centerline of the access road.

4.5.c.2.B. Curves. -- The grade on switchback curves must be reduced to less than the approach grade and must not be greater than ten percent (10%);

4.5.c.2.C. Cut Slopes. -- Cut slopes must not be steeper than 1:1 in soils or 1:4 in rock.

4.5.c.2.D. Drainage Ditches. -- After the effective date of this rule, newly designed ditches must be provided on both sides of a throughcut and on the inside shoulder of a cutfill section, with ditch relief culverts being spaced according to grade. Water must be intercepted or directed around and away from a switchback. All ditchlines must be capable of passing the peak discharge of a ~~10~~-year 25-year, 24-hour storm. 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.c.2.E. Drainage Culverts. -- Ditch relief culverts must be installed wherever necessary to ensure proper drainage of surface water beneath or through the access road.

4.5.c.2.E.1. Culverts must be installed in accordance with the following spacings:

4.5.c.2.E.1.(a) For a road grade of zero to five percent (0% to 5%), the spacing must be three hundred to eight hundred (300 to 800) feet;

4.5.c.2.E.1.(b) For a road grade of five to ten percent (5 to 10%), the spacing must be two hundred to three hundred (200 to 300) feet; and

4.5.c.2.E.1.(c) For a road grade of ten to fifteen percent (10 to 15%), the spacing must be one hundred to two hundred (100 to 200) feet.

4.5.c.2.E.2. Culverts 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 must be straight and coincide with the normal flow.

4.5.c.2.E.3. The inlet end of each culvert must be protected by a headwall of stable material as approved by the ~~director~~Secretary and the slope at the outlet end must be protected with an apron of rock riprap, energy dissipater, or other material approved by the ~~director~~Secretary.

4.5.c.2.E.4. Culverts must be covered by compacted fill to a minimum depth of one (1) foot or one-half ($\frac{1}{2}$) of the culvert inside diameter, whichever is greater.

4.5.c.2.E.5. Alternative culvert designs may be submitted to the

~~director~~Secretary for approval in cases where the design criteria in subparagraph 4.5.c.2.E of this rule is deemed to be impractical.

4.5.c.2.F. Culvert Openings. -- After the effective date of this rule, newly designed culvert openings installed on an access road must ~~not be less than one hundred (100) square inches in~~ be at least 12 inches in diameter, or equivalent area, but, in any event, all culvert openings must be of adequate capacity to carry the peak discharge capacity of a ~~1-year~~ 25-year, 24-hour storm from the contributing watershed and must receive necessary maintenance to function properly at all times.

4.5.c.2.G. Intermittent or Perennial Stream Crossing. -- After the effective date of this rule, newly designed culverts, bridges, or other drainage structures must be used to cross intermittent or perennial streams. Consideration 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 may the sediment load of the stream be significantly increased or the water quality be significantly decreased during the construction period. Water control structures must be designed with a discharge capacity capable of passing, at a minimum, the peak runoff of a ~~10~~25-year, 24-hour storm from the contributing watersheds. If approved by the ~~director~~Secretary, 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~~ 25-year, 24-hour storm.

~~4.5.c.2.H. Sediment Control. -- A sediment storage volume must be provided equal to 0.125 acre-feet for each acre of disturbed area and the storm water provisions of the Federal Clean Water Act, as reflected in W. Va. Code §22-11-1 et seq. and any rules promulgated thereunder. A lesser value may be approved by the director. Temporary erosion and sedimentation control measures must be~~

~~implemented during construction until permanent sedimentation control can be established:~~

~~4.5.c.2.I. 4.5.c.2.H. Revegetation of Slopes. -- All disturbed area including fill and cut slopes, must be revegetated by the use of seed and mulch immediately, unless approved by the~~ ~~director~~Secretary, after the construction of an access road and that revegetation must be maintained thereafter as necessary to control or prevent erosion.

~~4.5.c.2.J. 4.5.c.2.I. Surfacing. -- An access road 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.c.3. Removal of Drainage Structures. -- Bridges, culverts, and stream crossings necessary to provide access to the facility must not be removed until reclamation is completed and approved by the ~~director~~Secretary. 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.c.4. Existing Access Roads. -- Where existing roads are to be used for access or haulage, the requirements of subparagraphs 4.5.c.2.A through 4.5.c.2.E of this rule may be waived by the ~~director~~Secretary if it can be demonstrated that reconstruction to meet the requirements of subdivision 4.5.c of this rule would result in greater environmental harm than is produced by existing conditions and that the drainage requirements in paragraph 4.5.c.2 of this rule can otherwise be met.

4.5.c.5. 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 ~~director~~Secretary from compliance with the requirements of subparagraphs 4.5.c.2.A, 4.5.c.2.H and 4.5.c.2.I of this rule.

4.5.c.6. Dust Control. -- All reasonable means must be employed to control dust from the surface of access roads, including those statutes, rules and regulations of the W. Va. ~~Office~~ Division of Air Quality.

4.5.c.7. Abandonment of Access Roads. -- Access roads must be abandoned in accordance with the following:

4.5.c.7.A. Every effort 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 must be installed in accordance with the following spacings;

4.5.c.7.A.1. For a grade of zero to five percent (0% to 5%), the spacing must be three hundred to eight hundred (300 to 800) feet;

4.5.c.7.A.2. For a grade of five to ten percent (5 to 10%), the spacing must be two hundred to three hundred (200 to 300) feet; and

4.5.c.7.A.3. For a grade of ten to fifteen percent (10 to 15%), the spacing must be one hundred to two hundred (100 to 200) feet.

4.5.c.7.B. The land covered by an access road must be revegetated by the use of seed and mulch immediately, unless approved by the ~~director~~Secretary, after the abandonment of the road in accordance with subdivision 4.5.f of this rule.

4.5.d. Liners.

4.5.d.1. Liner System Requirements. -- A person who receives a permit for a landfill after June 2, 1996 -- including a permit that results in an expansion of a currently permitted landfill -- must design, construct, operate, and maintain a liner system at that landfill. Nothing within this rule may be construed to allow the installation of any liner system on areas not lined as of June 2, 1996 that is not in conformance with subparagraph 4.5.d.1.C or 4.5.d.1.E of this rule. Landfills that do have a W. Va. Code Chapter 22,

Article 15 permit and a liner installed as of that date may install a liner as approved by the ~~director~~Secretary in accordance with the following:

4.5.d.1.A. A landfill for which a valid closure permit has been issued pursuant to W. Va. Code §22-15-10 may remain in operation after the date of this rule, provided that -- the facility is in conformance with its permit and this rule, and such landfill has in place:

4.5.d.1.A.1. Groundwater monitoring wells in conformance with the requirements of subdivision 3.8.d of this rule;

4.5.d.1.A.2. A groundwater monitoring program in conformance with the requirements of subsection 4.11 of this rule;

4.5.d.1.A.3. An effective leachate treatment capability; and

4.5.d.1.A.4. Sediment run-off control.

4.5.d.1.B. All new SWLFs and lateral expansions that meets all of the requirements enumerated in subparagraphs 4.5.d.1.A and 4.5.d.1.B of this rule, may remain in operation provided that: the liner must meet the following criteria:

4.5.d.1.B.1. The liner must be constructed, installed and maintained in accordance with a design approved by the ~~director~~Secretary.

4.5.d.1.B.2. 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~~Secretary under subparagraph 4.5.d.1.G or;

4.5.d.1.B.3. 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.d.1.C. A liner system must consist of the following elements:

4.5.d.1.C.1. Subbase, which is the prepared layer of soil or earthen materials upon which the remainder of the liner system is constructed;

4.5.d.1.C.2. 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.d.1.C.3. Composite liner, which consists of two (2) components; the compacted clay component topped with the synthetic liner; and

4.5.d.1.C.4. Leachate collection and protective cover zone, which is a leachate collection system within a prepared ~~lay~~ layer of soil or earthen material placed over the composite liner; and

4.5.d.1.C.5. A reinforcement layer, if indicated by stability studies or other indicators, to prevent liner failure.

4.5.d.1.D. Active areas of existing landfills which have installed liners, leachate collection systems, and groundwater monitoring programs, as of June 2, 1996 may petition the directorSecretary to allow use of an alternative liner system, if:

4.5.d.1.D.1. A demonstration is made to the directorSecretary that an alternative design will provide the same degree of protection of the groundwater resources as the liner system described in subparagraph 4.5.d.1.E of this rule. The demonstration must include a series of groundwater monitoring well sampling analyses 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.d.1.D.2. A bond or other applicable means of financial assurance is posted in compliance with subdivision 3.7.j and subsection 3.13.

4.5.d.1.E. In order to allow for the development of new technology, applicants may petition the directorSecretary to allow installation of an alternative liner system upon a demonstration to the directorSecretary that the alternative system will be equally or more protective of the groundwater resources than the liner system described in subdivision 4.5.d of this rule.

4.5.d.1.F. Alternative Liner Design. -- Any permittee who wishes to utilize an alternative liner design must submit a design to the directorSecretary that complies with subdivision 4.5.d of this rule, and must address the following factors:

4.5.d.1.F.1. The hydrogeologic characteristics of the facility and surrounding land;

4.5.d.1.F.2. The climatic factors of the area; and

4.5.d.1.F.3. The volume and physical and chemical characteristics of the leachate.

4.5.d.1.G. Relevant Point of Compliance.

4.5.d.1.G.1. The relevant point of compliance specified by the directorSecretary 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.d.1.G.2. In determining the relevant point of compliance, the directorSecretary must consider at least the following factors:

4.5.d.1.G.2.(a) The hydrogeologic

characteristics of the facility and surrounding land;

4.5.d.1.G.2.(b) The volume and physical and chemical characteristics of the leachate;

4.5.d.1.G.2.(c) The quantity, quality, and direction, of flow of groundwater;

4.5.d.1.G.2.(d) The proximity and withdrawal rate of the groundwater users;

4.5.d.1.G.2.(e) The availability of alternative drinking water supplies;

4.5.d.1.G.2.(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.d.1.G.2.(g) Public health, safety, and welfare effects; and

4.5.d.1.G.2.(h) Practicable capability of the permittee.

4.5.d.2. Liner System Limitations.

4.5.d.2.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.d.2.A.1. 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.d.2.A.2. 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.d.2.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.d.2.C. A minimum of four (4) feet vertical separation must be maintained between the bottom of the subbase of the liner system and bedrock unless otherwise approved by the directorSecretary. If backfilled material is used, the nature of these materials is subject to approval by the directorSecretary.

4.5.d.2.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 must be protected by soil cover or other method approved in the permit until additional liner is added.

4.5.d.2.E. If the approved design plans do not provide for the placement of additional adjacent liner, waste must not be placed within five (5) feet of an edge of the liner.

4.5.d.2.F. A liner berm at least four (4) feet high must be constructed and maintained along the edge of the liner to prevent the lateral escape of leachate.

4.5.d.2.G. The edge of the liner must be clearly marked.

4.5.d.2.H. The operator must comply with additional requirements the directorSecretary deems necessary to protect public health, safety, and the environment.

4.5.d.3. Liner System Subbase.

4.5.d.3.A. The subbase portion of a liner system must:

4.5.d.3.A.1. 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.d.3.A.2. 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.d.3.A.3. Be no more permeable than 1×10^{-6} cm/sec based on laboratory and field testing;

4.5.d.3.A.4. Be hard, uniform, smooth, and free of debris, rock, plant materials, and other foreign material; and

4.5.d.3.A.5. Have a slope of at least two percent (2%).

4.5.d.3.A.6. The subbase construction certification and a Q.A./Q.C. report must be submitted to the ~~director~~Secretary prior to the placement of any material over the subbase.

4.5.d.3.A.7. 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.d.4. Liner System Leachate Detection Zone.

4.5.d.4.A. The leachate detection zone must:

4.5.d.4.A.1. 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.d.4.A.2. Be at least twelve (12) inches thick;

4.5.d.4.A.3. Be comprised of clean soil or earthen materials that contain no debris, plant material, or material with sharp edges;

4.5.d.4.A.4. 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.d.4.A.5. 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.d.4.A.5.(a). The slope, size, and spacing of the piping system must assure that liquids drain efficiently from the leachate detection zone;

4.5.d.4.A.5.(b) The distance between pipes in the piping system must not exceed one hundred (100) feet on center unless otherwise approved by the ~~director~~Secretary;

4.5.d.4.A.5.(c) The pipes must be installed nearly perpendicular to the slope with continuous positive slope;

4.5.d.4.A.5.(d) The minimum diameter of the perforated pipe must be four (4) inches with a wall thickness of Schedule 40 or greater;

4.5.d.4.A.5.(e) The pipe must be capable of supporting anticipated loads without failure based upon facility design;

4.5.d.4.A.5.(f) Rounded stones or aggregates must be placed around all portions of the pipes of the piping system. The stones or aggregates must be sized to prevent clogging of the pipes and damage to the subbase and the composite liner;

4.5.d.4.A.5.(g) The piping system must be installed in a fashion that facilitates cleanout, maintenance, and monitoring. Manholes or cleanout risers must be located along the perimeter of the leachate collection piping system. The number and spacing of the manholes or cleanout risers must be sufficient

to ensure proper maintenance of the piping system by water jet flushing or an equivalent method;

4.5.d.4.A.5.(h) The leachate detection system must be cleaned and maintained as necessary; and

4.5.d.4.A.5.(i) If required by the Secretary in writing leachate detection pipes used to transport leachate that are not within the bounds of the composite liner, must be double-walled pipe; and

4.5.d.4.A.5.(i) 4.5.d.4.A.5.(j) The leachate detection zone construction certification and a Q.A./Q.C. report must be submitted to the directorSecretary prior to the placement of the composite liner.

4.5.d.5. Liner System Composite Liner. -- The composite liner must be comprised of the following components, unless otherwise approved in writing by the directorSecretary:

4.5.d.5.A. The compacted clay component must:

4.5.d.5.A.1. Be a minimum compacted thickness of two (2) feet;

4.5.d.5.A.2. Be compacted in six (6) inch lifts;

4.5.d.5.A.3. Be no more permeable than 1×10^{-7} cm/sec based on laboratory and field testing;

4.5.d.5.A.4. 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.d.5.A.5. Be placed without damaging the subbase and leachate detection zone;

4.5.d.5.A.6. 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.d.5.A.7. Have a slope of at least two percent (2%) to facilitate the drainage of leachate across the liner surface; and

4.5.d.5.A.8. 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.d.5.A.9. The directorSecretary may approve the substitution of three (3) feet of compacted soil, with a minimum permeability of 1×10^{-6} cm/sec for the required two (2) feet of compacted clay, with a minimum permeability of 1×10^{-7} cm/sec if equivalency of groundwater protection can be proven.

4.5.d.5.B. The synthetic component must:

4.5.d.5.B.1. Be no more permeable than 1×10^{-7} cm/sec;

4.5.d.5.B.2. Have a minimum thickness of sixty (60) mils;

4.5.d.5.B.3. Be installed in accordance with manufacturers' specifications under the supervision of an authorized representative of the manufacturer;

4.5.d.5.B.4. Be inspected for uniformity, damage, and imperfections during construction or installation;

4.5.d.5.B.5. Have a slope of at least two percent (2%) to facilitate the drainage of leachate across the liner surface;

4.5.d.5.B.6. 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.d.5.B.7. Have field seams oriented parallel to the line of the maximum slope and not across the slope. In corners and irregularly-shaped portions, the number of field seams must be minimized. No horizontal seam may be less than five (5) feet from the toe of slope;

4.5.d.5.B.8. 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 directorSecretary 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.d.5.B.9. Be anchored a minimum of twenty-four (24) inches horizontally back from the edge of the top of the slope. The liner must be anchored by cutting a trench twelve (12) to sixteen (16) inches in depth, laying the liner across the soil perimeter of the trench, backfilling the trench, and compacting the backfill material; and

4.5.d.5.B.10. Be installed under the direction of a field crew foreman or other person approved in writing by the directorSecretary with documented successful liner installation experience.

4.5.d.5.C. The certification of the construction of the composite liner compacted clay component and a Q.A./Q.C. report must be submitted to the directorSecretary prior to the placement of the composite liner synthetic component.

4.5.d.5.D. The composite liner synthetic component construction certification and the Q.A./Q.C. report must be submitted to the directorSecretary prior to the placement of the leachate collection and protective cover zone.

4.5.d.6. Liner System Leachate Collection and Protective Cover Zone.

4.5.d.6.A. The leachate collection and protective cover zone must:

4.5.d.6.A.1. 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.d.6.A.2. Be at least eighteen (18) inches thick;

4.5.d.6.A.3. 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.d.6.A.4. 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.d.6.A.5. Be graded, uniformly compacted, and smoothed;

4.5.d.6.A.6. Be installed in a manner that prevents damage to the composite liner;

4.5.d.6.A.7. 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 must also meet the following:

4.5.d.6.A.7.(a) The slope, sizing and spacing of the piping system must ensure that liquids drain efficiently from the leachate collection zone;

4.5.d.6.A.7.(b) The distance between pipes in the piping system must not

exceed one hundred (100) feet on center unless otherwise approved by the ~~director~~Secretary;

4.5.d.6.A.7.(c) The pipes must be installed nearly perpendicular to the slope with continuous positive slope;

4.5.d.6.A.7.(d) The minimum diameter of the perforated pipe must be four (4) inches with a wall thickness of Schedule 40 or greater;

4.5.d.6.A.7.(e) The pipe must be capable of supporting anticipated loads without failure based upon facility design;

4.5.d.6.A.7.(f) Rounded stones or aggregates must be placed around all portions of the pipes of the piping system. The stones or aggregates must be sized to prevent clogging of the pipes and damage to the composite liner;

4.5.d.6.A.7.(g) The piping system must be installed in a fashion that facilitates cleanout, maintenance, and monitoring. Manholes and cleanout risers must be located along the perimeter of the leachate detection piping system. The number and spacing of the manholes and cleanout risers must be sufficient to ensure proper maintenance of the piping system by water jet flushing or an equivalent method;

4.5.d.6.A.7.(h) The leachate collection system must be cleaned and maintained as necessary; and

4.5.d.6.A.7.(i) 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; and

4.5.d.6.A.7.(j) If required by the Secretary in writing leachate collection pipes used to transport leachate that are not within the bounds of the composite liner, must be double-walled pipe.

4.5.d.6.B. The leachate collection zone construction certification and the Q.A./Q.C. report must be submitted to the ~~director~~Secretary prior to the placement of solid waste.

4.5.d.7. Liner System Engineer Certification.

4.5.d.7.A. The liner system must be inspected during, and at the end of the construction by a registered professional engineer.

4.5.d.7.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 must certify to the ~~director~~Secretary under seal that the element or stage was constructed as approved in the permit.

4.5.d.8. Liner System Initial Placement of Solid Waste. -- The first eight (8) feet of solid waste placed on the protective cover must not contain material capable of penetrating or puncturing the protective cover.

4.5.e. Quality Assurance and Quality Control. -- The quality control measures and tests required by the Q.A./Q.C. plan under subdivision 4.5.e of this rule must be employed to ensure that the engineering design and performance standards are achieved.

4.5.e.1. The Q.A./Q.C. inspector will inspect those aspects of the subbase and subgrade preparation including, but not limited to, the following:

4.5.e.1.A. Subgrade Preparation.

4.5.e.1.A.1. Site preparation, including clearing, and grubbing;

4.5.e.1.A.2. Excavation and contouring of the subgrade to required

elevations;

4.5.e.1.B. Subbase Preparation.

4.5.e.1.B.1. Compaction of subbase to design density at proper moisture content to achieve required strength and stability to support the liner;

4.5.e.1.B.2. Moisture content density and field strength tests performed as required;

4.5.e.1.B.3. Compacted lift thickness;

4.5.e.1.B.4. Compaction equipment weight, speed, and number of passes;

4.5.e.1.B.5. Method of moisture addition;

4.5.e.1.B.6. Proof rolling of subbase; and

4.5.e.1.B.7. Fine finishing of the subbase for acceptability of areas to be lined.

4.5.e.2. The Q.A./Q.C. inspector must inspect those aspects of the liner system including, but not limited to, the following:

4.5.e.2.A. Liner material to ensure that the materials being used meet specifications;

4.5.e.2.B. Liner material stockpiling, storage, and handling in a manner that prevents damage;

4.5.e.2.C. Inspections of locations where inlet/outlet structures that penetrate the liner to ensure the compatibility of those structures with respect to the liner;

4.5.e.2.D. Final grades of the liner to ensure that they are within acceptable tolerance;

4.5.e.2.E. Final inspection of the liner for acceptability prior to placement of the protective cover material;

4.5.e.2.F. Installation of the compacted clay component of the liner with respect to the following:

4.5.e.2.F.1. 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.e.2.F.2. Uniformity of compaction;

4.5.e.2.F.3. Compacted lift thickness;

4.5.e.2.F.4. Compacted liner thickness;

4.5.e.2.F.5. Compaction equipment weight, speed, and number of passes;

4.5.e.2.F.6. Moisture content, density, hydraulic conductivity, and field infiltration tests to ensure that they are performed as required; and

4.5.e.2.F.7. Repairs and corrective or remedial action performed as required;

4.5.e.2.G. Synthetic liner component with respect to the following:

4.5.e.2.G.1. Liner panel placement is in accordance with required configuration;

4.5.e.2.G.2. Permanent and temporary anchoring procedures are followed;

4.5.e.2.G.3. Overlap and seam width are in accordance with the design;

4.5.e.2.G.4. The area of seaming is clean and supported;

4.5.e.2.G.5. The uniformity and continuity of seams and welds;

4.5.e.2.G.6. Cap strips are installed

on all seams, as applicable;

4.5.e.2.G.7. Qualitative and quantitative field seaming tests are performed as required for imperfections in seams, wrinkles, and fishmouths and that all imperfections are repaired as required; and

4.5.e.2.G.8. Corrective or remedial action taken;

4.5.e.2.H. The Q.A./Q.C. inspector must inspect those aspects of the leachate detection, and leachate collection and protective cover systems including, but not limited to, the following:

4.5.e.2.H.1. Material stockpiling, storage, and handling to prevent damage;

4.5.e.2.H.2. Drainage layer placement;

4.5.e.2.H.3. Thickness of the leachate detection, leachate collection and protective cover zones;

4.5.e.2.H.4. Grain size analyses, relative density and compaction tests are performed as required;

4.5.e.2.H.5. Uniformity of the soil;

4.5.e.2.H.6. Grades and alignments are within acceptable tolerance;

4.5.e.2.H.7. Placement of stone or aggregate around all portions of the pipes in the piping systems;

4.5.e.2.H.8. 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.e.2.H.9. Proper placement of the geotextile materials within the leachate detection zone and within the leachate collection and protective cover zone.

4.5.e.2.I. Daily Q.A./Q.C. reports must be prepared by the Q.A./Q.C. inspectors and maintained in a bound log book which must be available at the job site at all times for inspection by the ~~director~~Secretary. All lab reports and field testing results must be signed and dated by the inspector, and must be attached to the log book reports. Each daily log book report must include, but not be limited to, the following:

4.5.e.2.I.1. Identification of project name, location, and date;

4.5.e.2.I.2. Weather conditions prevalent during construction and installation including:

4.5.e.2.I.2.(a) Temperature (daily high and low);

4.5.e.2.I.2.(b) Barometric pressure (high and low);

4.5.e.2.I.2.(c) Wind direction and maximum speed;

4.5.e.2.I.2.(d) Time of each precipitation event; and

4.5.e.2.I.2.(e) Total amount of each precipitation event;

4.5.e.2.I.3. Description and location of construction currently underway;

4.5.e.2.I.4. A listing of all equipment and personnel at work at each unit;

4.5.e.2.I.5. Description and location of areas being tested or observed;

4.5.e.2.I.6. Off-site material received and quality verification documentation;

4.5.e.2.I.7. Calibration of test equipment;

4.5.e.2.I.8. Description and location

of remedial action taken; and

4.5.e.2.I.9. Decisions and comments including conversations, directives, and directions for the following:

4.5.e.2.I.9.(a)

Acceptance or failure of inspections and tests;

4.5.e.2.I.9.(b)

Acceptance or failure of daily work unit performance;

4.5.e.2.I.9.(c) Problems encountered and corrective action taken;

4.5.e.2.I.9.(d) On-going corrective action;

4.5.e.2.I.9.(e) In-field modifications; and

4.5.e.2.I.9.(f) Assessment of overall project quality.

4.5.f. Revegetation Plan.

4.5.f.1. Function of Annual and Biennial Cover Crops. -- On areas where erosion is likely to occur, rapid establishment of vegetative cover is required. Immediate revegetation by the use of seeding and mulching with approved annuals and biennials on such areas must be approved as a means for achieving temporary vegetative cover only.

4.5.f.2. Minimum Requirements of Soil Amendments.

4.5.f.2.A. A minimum of six hundred pounds per acre (600 lbs/acre) of 10-20-10 or 10-20-20 fertilizer, or equivalent, must be applied. Fertilizer rates based on soil analyses conducted by a qualified lab may be substituted for the minimum fertilizer rate.

4.5.f.2.B. Lime is required where soil pH is less than 5.5. Lime rates must be such that a standard soil pH of 6.0 is achieved.

4.5.f.2.C. Mulch must be used on all disturbed areas. A list of approved materials and minimum application rates is available from the ~~director~~Secretary.

4.5.f.3. Standards for Evaluating Vegetative Cover.

4.5.f.3.A. Final Revegetation Report. -- The report must be submitted to the ~~director~~Secretary 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.f.3.B. Time for Inspection. -- Prior to the spring and fall planting seasons, the operator 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 must be temporarily revegetated.

4.5.f.3.C. Standards for Perennials. -- Standards for legumes and perennial grasses are required to achieve at least a ninety percent (90%) ground cover. Substandard areas must not exceed one-quarter acre in size, nor total more than ten percent (10%) of the revegetated area.

4.5.g. Miscellaneous. -- All facilities must be designed to meet the following requirements:

4.5.g.1. A method of controlling any dust or windblown debris must be included in the facility design. The factors which will be considered by the ~~director~~Secretary 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.g.2. Access to the facility must be restricted through the use of fencing, natural barriers, or other methods approved in writing by the ~~director~~Secretary;

~~4.5.g.3. 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 all adjacent property lines;~~

4.5.g.4. ~~4.5.g.3.~~ 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.g.5. 4.5.g.4.~~ The grade of the final surface of the facility must not be less than three percent (3%) nor more than twenty-five percent (25%) unless otherwise approved by the ~~director~~Secretary as a part of the issued permit.

4.5.g.5. Long slopes 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.g.6. 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.g.7. A permittee storing waste must provide a sufficient number of containers to contain solid waste generated during periods between regularly scheduled collections;

4.5.g.8. An individual container or bulk container used for the storage of solid waste must have the following characteristics:

4.5.g.8.A. The container must be constructed to be easily handled for collection; and

4.5.g.8.B. The container must be corrosion resistant and compatible with waste to be stored;

4.5.g.9. An individual container or bulk container used for the storage of putrescible solid waste must also have the following characteristics:

4.5.g.9.A. The container must be equipped with a tight fitting lid or cover, or otherwise sealed; and

4.5.g.9.B. The container must be watertight, leak proof, insect proof, and rodent proof; and

4.5.g.10. A permittee that stores waste outside of containers 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.a. General Requirements.

4.6.a.1. No person may operate or maintain a solid waste facility that does not conform to an approved plan of operation and the following:

4.6.a.1.A. Daily deposition of solid waste must be confined to as small an area as practical;

4.6.a.1.B. Provisions must be made to confine windblown material within the active disposal area;

4.6.a.1.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 subdivision 4.6.a of this rule, unless the operator establishes, to the satisfaction of the directorSecretary, that:

4.6.a.1.C.(a) All windblown material cannot be collected using reasonable efforts because of conditions beyond the control of the operator;

4.6.a.1.C.(b) Windblown material which can be collected using a reasonable effort has been collected and disposed of properly;

4.6.a.1.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.a.1.E. Permittees of all SWLFs 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 directorSecretary, as appropriate to protect human health and the environment;

4.6.a.1.F. Procedures for Excluding the Receipt of Regulated Hazardous Waste.

4.6.a.1.F.1. 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 40CFR161) and polychlorinated biphenyls (PCB) wastes at the facility (regulated under the Toxic Substances Control Act, and as defined in 40CFR161, or as reflected in W. Va. Code §22-18-1 et seq.)

4.6.a.1.F.2. Measures that solid waste facility operators must incorporate in their programs to exclude receipt of hazardous waste, include at a minimum:

4.6.a.1.F.2.(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 DivisionDepartment authorities if a regulated hazardous waste is found at the facility unless the permittee takes other steps approved by the directorSecretary in writing to ensure that incoming loads do not contain regulated hazardous wastes or PCB wastes;

4.6.a.1.F.2.(b) Records of any inspections, activities and information must be reported on a form prescribed by the directorSecretary and copies of these inspection records and all related information must be retained in the SWLF's operating record.

4.6.a.1.F.2.(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.a.1.F.3. Procedures for providing written notification to the directorSecretary as required under Subtitle C of RCRA, or applicable rules and regulations promulgated under W. Va. Code §22-18-1 et seq., if a regulated hazardous waste or PCB waste is discovered at the facility.

4.6.a.1.G. Effective means must be taken to limit and control public access and prevent illegal dumping of wastes at the active disposal area to minimize exposure of the public to hazards;

4.6.a.1.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, other insects, 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.a.1.I. Equipment must be provided,

and daily cover material made available, to control accidental fires. Also, arrangements must have been made previously with the local fire protection agency to utilize their services when needed;

4.6.a.1.J. An attendant must be on duty at the facility at all times while it is open for public use;

4.6.a.1.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.a.1.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.a.1.M. A sign, acceptable to the ~~director~~Secretary, 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 must be posted and maintained for the duration of the active life of the SWLF, be clearly visible, readable, and uniform throughout the operation, be permanently fixed, and made of durable material;

4.6.a.1.N. The facility 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.a.1.O. Means acceptable to the ~~director~~Secretary must be taken to control dust resulting from facility operation;

4.6.a.1.P. Daily cover must be applied to the active disposal area to control the prohibited act of scavenging;

4.6.a.1.Q. All burning is prohibited in accordance with statutes, rules and regulations of the West Virginia ~~Office~~ Division of Air Quality;

4.6.a.1.Q.1. 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~~ Division of Air Quality is prohibited at all SWLFs.

4.6.a.1.R. Provisions must be made for backup equipment in the event of operating equipment breakdown;

4.6.a.1.S. All topsoil within the facility construction limits must be 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.a.1.T. All access roads to the active area of the operation must be maintained in good condition so as to prevent sedimentation of drainage ways.

4.6.b. Solid Waste Placement.

4.6.b.1. Solid Waste Placement and Compaction.

4.6.b.1.A. Working Faces. -- Solid waste must be placed for disposal only at designated working faces. Working face width must be minimized and must not exceed one hundred (100) feet unless otherwise approved by the ~~director~~Secretary. The slopes of working faces 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 must be removed.

4.6.b.1.B. Daily Cell Height. -- Daily cell height 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.b.1.C. Layering and Compaction. -- Solid waste 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, or as otherwise approved by the directorSecretary.

4.6.b.2. Cover Material Application.

4.6.b.2.A. Daily Cover. -- Except as provided in subparagraph 4.6.b.2.B, the permittee of all SWLFs must cover the entire exposed solid waste disposal area with a minimum thickness of six inches of compacted cover material at the end of each operating day, or at more frequent intervals if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging.

4.6.b.2.A.1. Alternative materials of an alternative thickness (other than at least six inches of earthen material) may be approved by the directorSecretary 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.b.2.A.2. The directorSecretary may grant a temporary waiver from the requirement of subparagraph 4.6.b.2.A and part 4.6.b.2.A.1. if the permittee demonstrates that there are extreme seasonal climatic conditions that make meeting such requirements impractical.

4.6.b.2.B. Intermediate Cover. -- Solid waste fill surfaces which will remain exposed to weather for periods in excess of thirty (30) days 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.b.2.C. Final Cover. -- Solid waste fill surfaces which will receive no further solid

waste deposits must place final cover in accordance with subparagraph 6.1.e.1.A of this rule.

4.6.b.2.D. Availability. -- Cover material must be available from the facility site or other designated sources in sufficient quantities to provide:

4.6.b.2.D.1. Six (6) inches of compacted daily cover material.

4.6.b.2.D.2. Twelve (12) inches of compacted intermediate cover material.

4.6.b.2.D.3. Sufficient cover material, as required in paragraph 4.6.b.2 and section 6 of this rule.

4.6.b.3. Waste Placement in Winter. -- For the installation of all 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 of the liner was constructed. Waste must 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 liner must be investigated for density and effects from freeze-thaw as specified by the directorSecretary and must be repaired and re-certified during the next construction season if required, prior to additional waste placement. These requirements may be waived by the directorSecretary upon the request of the permittee.

4.7. Acceptable and Unacceptable Wastes.

4.7.a. Acceptable Wastes. -- ~~Landfills~~ SWLF's may receive the following types of solid wastes, as authorized by the facility's permit, or by written permission of the directorSecretary that such waste is acceptable:

4.7.a.1. Agricultural waste;

- 4.7.a.2. Commercial waste;
- 4.7.a.3. Compost;
- 4.7.a.4. Construction waste;
- 4.7.a.5. Debris;
- 4.7.a.6. Demolition waste;
- 4.7.a.7. Discarded material;
- 4.7.a.8. Garbage;
- 4.7.a.9. Household waste;
- 4.7.a.10. Industrial waste;
- 4.7.a.11. Inert waste;
- 4.7.a.12. Municipal solid waste;
- 4.7.a.13. Non-municipal incinerator ash;
- 4.7.a.14. Putrescible waste;
- 4.7.a.15. Refuse;
- 4.7.a.16. Residential waste;
- 4.7.a.17. Rubbish;
- 4.7.a.18. Scrap metal;
- 4.7.a.19. Sludge;
- 4.7.a.20. Trash;
- 4.7.a.21. Bulky goods;
- 4.7.a.22. Other materials approved by the ~~director~~Secretary; and
- 4.7.a.23. Properly treated infectious wastes.
- 4.7.b. Unacceptable wastes. -- Landfills may not receive the following wastes under any conditions, unless otherwise approved by the ~~director~~Secretary:
- 4.7.b.1. Free liquids;
- 4.7.b.2. ~~Regulated~~ Hazardous wastes; as defined in 40 CFR §261.3, that are not excluded from regulation as hazardous wastes under 40 CFR §261.4(b).
- 4.7.b.3. Unstabilized sewage sludge or sludges that have not been dewatered, or contain less than 20% solids by weight;
- 4.7.b.4. Pesticide containers that have not been triple rinsed and crushed;
- 4.7.b.5. Drums that are not empty and not crushed, except as provided under paragraph 4.13.e of this rule;
- 4.7.b.6. Waste which may be infectious waste, or is recognizable treated noninfectious medical waste, as defined in section 2 of 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 subdivision 6.3.a of 64CSR56 for infectious medical waste unless:
- 4.7.b.6.A. The waste was generated by a household or by an individual during self-care or self-treatment; or
- 4.7.b.6.B. The waste has not been compacted and is accompanied by a label, manifest, or shipping document which:
- 4.7.b.6.B.1. Identifies the generator of the waste by name, address and business telephone number of the generator;
- 4.7.b.6.B.2. Identifies the name, address and business telephone number of the generator of the facility at which the waste was rendered noninfectious;
- 4.7.b.6.B.3. Identifies the amount of

waste rendered noninfectious by weight, volume, or number of containers, and the method of treatment;

4.7.b.6.B.4. 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 has been rendered noninfectious in accordance with procedures required by Infectious Medical Waste, 64CSR56;" and

4.7.b.6.B.5. 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.c. Wastes Acceptable under Certain Conditions.

4.7.c.1. 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.c.2. Waste containing PCBs at concentrations of fifty parts per million (50 ppm) or greater;

4.7.c.3. Municipal incinerator ash, except as provided under subdivision 4.13.j of this rule; or

4.7.c.4. Petroleum-contaminated soils, except as provided under subdivision 4.13.k of this rule.

4.8. Leachate Management.

4.8.a. General Requirements.

4.8.a.1. 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.a.2. 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 subsection 4.8 of this rule unless otherwise approved by the ~~director~~Secretary in writing.

4.8.a.3. 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.a.4. Except as otherwise provided in paragraph 4.8.a.5 through 4.8.a.6 of 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 paragraph 4.8.a.7 of this rule within three (3) years following the detection of leachate in the collection or handling system, unless otherwise approved by the ~~director~~Secretary. 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.a.5. 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 §22-11-1 et seq., and the rules and regulations promulgated thereunder, if the ~~director~~Secretary approves this method in the solid waste facility permit issued under 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.a.6. 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 directorSecretary approves this method in the solid waste facility permit issued under this rule. On-site treatment and subsequent land application will not be allowed unless, at a minimum:

4.8.a.6.A. Discharge into a POTW or other permitted treatment facility is not possible;

4.8.a.6.B. Discharge of the treated leachate into a receiving stream in a manner consistent with W. Va. Code §22-11-1 et seq., and the rules and regulations promulgated thereunder, is not attainable; and

4.8.a.6.C. Temporary spray irrigation is approved in the municipal solid waste facility permit issued under this rule.

4.8.a.7. 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 directorSecretary, 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.a.7.A. If the directorSecretary determines that a direct discharge into a POTW or other permitted treatment facility is not reasonably attainable; and

4.8.a.7.B. If the directorSecretary determines that a discharge of treated leachate into a receiving stream in a manner consistent with W. Va. Code §22-11-1 et seq., and the rules promulgated thereunder, is not attainable without potential degradation of the receiving stream within three (3) years.

4.8.a.8. 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 directorSecretary within fifteen (15) days from loss of its approved treatment facility, implementation of the treatment plan required by paragraph 4.8.a.6.A of 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.a.9. Except for industrial solid waste landfills, in conjunction with any of the treatment methods in subdivision 4.8.a of this rule, the temporary recirculation of leachate may be utilized if the following conditions exist:

4.8.a.9.A. The area subject to leachate recirculation previously has been filled with solid waste;

4.8.a.9.B. There is sufficient waste capacity to absorb the leachate;

4.8.a.9.C. The area subject to leachate recirculation is underlain by a leachate collection system and a composite liner as described in subdivision 4.5.d; and

4.8.a.9.D. Leachate recirculation is conducted with a piping system approved by the directorSecretary located under the intermediate cover and causes no odors, runoff, or ponding.

4.8.a.10. The permittee must immediately notify the directorSecretary and describe remedial steps to be taken if:

4.8.a.10.A. Operation of the leachate treatment facility under this rule cannot prevent the facility from:

4.8.a.10.A.1. Violating the terms of its permit, this rule, the Clean Water Act and the rules and regulations promulgated thereunder, or W. Va. Code §22-11-1 et seq.

and the rules and regulations promulgated thereunder; or

4.8.a.10.A.2. Causing surface water pollution or groundwater degradation, contamination, or pollution;

4.8.a.10.B. The facility is generating a quality or quantity of leachate that exceeds the design capacity of the treatment system;

4.8.a.10.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.a.10.D. The contractual agreement for leachate treatment by an off-site treatment system is breached or expired; or

4.8.a.10.E. The quality or quantity of solid waste being disposed at the facility changes from that set forth in the permit.

4.8.b. Leachate Treatment System, Design, and Construction.

4.8.b.1. Tanks, containers, and impoundments for storing leachate at a solid waste facility before or during treatment must be constructed and lined in accordance with subdivisions 4.8.b and 4.8.c of this rule.

4.8.b.2. 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.

4.8.b.3. Impoundments or tanks must be aerated as necessary to prevent and control odors.

4.8.b.4. 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.b.5. 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 ~~director~~Secretary must be installed prior to the storage or disposal of solid waste.

4.8.b.6. 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 ~~director~~Secretary 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.b.7. A modification to a leachate treatment system must be completed within one (1) year after construction is initiated, unless the ~~director~~Secretary specifies a shorter period of time in the permit modification.

4.8.c. Liquid Storage.

4.8.c.1. Aboveground and Onground Tank Requirements.

4.8.c.1.A. Tanks may be constructed of concrete, steel, or other material approved by the ~~director~~Secretary. 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.c.1.A.1. 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.c.1.A.2. 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.c.1.A.3. 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.c.1.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.c.1.B.1. 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.c.1.B.2. 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.c.1.B.2.(a) A minimum one (1) foot layer of compacted soil with a maximum permeability of 1×10^{-7} centimeters per second;

4.8.c.1.B.2.(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.c.1.B.2.(c) A geosynthetic liner of a minimum thickness equal to sixty (60) mils.

4.8.c.1.B.3. 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 §§22-11-1 et seq., 22-15-1 et seq. and 22-12-1 et seq., and all applicable federal and state statutes, rules and regulations.

4.8.c.1.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.c.1.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 ~~director~~ Secretary upon request for the lifetime of the liquid storage system.

4.8.c.1.E. All uncovered tanks must have a minimum two (2) feet freeboard. Odor and vector control must be practiced when necessary.

4.8.c.2. Underground Tank Requirements.

4.8.c.2.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.c.2.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 director~~Secretary~~.

4.8.c.2.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.c.2.C.1. 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.c.2.C.2. 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.c.2.C.2.(a) All resistant coatings applied to the primary tank interior must be chemically compatible with the liquid to be stored.

4.8.c.2.C.2.(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 director~~Secretary~~. A deficiency in the cathodic protection system must be corrected upon discovery.

4.8.c.2.D. All underground tanks must be equipped with an overflow prevention system which may include but not be limited to: level sensors and gauges, high level alarms, or automatic shutoff controls. The overflow control equipment must be inspected weekly by the facility operator to ensure it is in good working

order.

4.8.c.2.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.c.3. Surface Impoundment Requirements.

4.8.c.3.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 W. Va. Code §22-14-3 must first obtain a certificate of approval for a dam before a solid waste facility permit can be approved under this rule.

4.8.c.3.B. Surface impoundments subject to 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 paragraph 4.8.c.3 of this rule must either be closed or retrofitted to conform to this subparagraph. Liner construction must include the following:

4.8.c.3.B.1. The top liner must be a synthetic liner with a minimum thickness equal to sixty (60) mils. A protective cover must be placed over this liner to prevent damage during clean-out operations.

4.8.c.3.B.2. A leak detection and removal system must be installed between the two (2) synthetic liners.

4.8.c.3.B.3. 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.c.3.B.4. Quality assurance and quality control testing must be performed by the project engineer in conformance with the requirements identified in subdivision 4.5.e of this rule.

4.8.c.3.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.c.3.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 ~~director~~Secretary in accordance with this rule.

4.8.c.3.E. The ~~director~~Secretary may determine the liner system requirements for surface impoundments of solid waste facilities, not including MSWLFs, on a case by case basis. At a minimum, the liner system ~~shall~~ must be at least as stringent as the liner requirements for the disposal/storage cell area of the facility.

4.8.c.4. Closure of Liquid Storage Facilities.

4.8.c.4.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.c.4.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.c.4.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.c.4.C.1. 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 ~~director~~Secretary.

4.8.c.4.C.2. 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.c.4.C.3. 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 ~~director~~Secretary. 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 be backfilled and regraded to the surrounding topography.

4.8.d. Leachate Analysis. -- The permittee must comply with the following sampling requirements at all monitoring points of the leachate collection and detection system as prescribed by the ~~director~~Secretary:

4.8.d.1. On a daily basis, the flow rate and volume of flowing liquids from the leachate collection and detection systems must

be determined; and

4.8.d.2. On a semiannual basis, the chemical composition of the influent leachate prior to physical and chemical treatment must be determined through the analysis of the leachate for the parameters listed in Appendix I, or as specified by the facility permit, or order of the ~~director~~Secretary must be conducted.

4.9. Water Quality Standards. -- All permittees are required under the provisions of W. Va. Code §22-11-1 et seq. and the rules promulgated thereunder 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.a. Explosive Gases Control.

4.10.a.1. Effective means must be utilized by the permittee to prevent the migration of explosive gases generated in any facility structure, and to ensure that:

4.10.a.1.A. The concentration of methane or other explosive gases generated by the facility, including the waste fill, or 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.a.1.B. The concentration of methane and other explosive gases does not exceed the lower explosive detection limit for methane or other explosive gases at the facility property boundary; and

4.10.a.1.C. If required by the Secretary in writing, passive gas vents or other appropriate

means to vent gas approved by the Secretary, must be installed on disposal areas that have not received waste in six (6) months, nor will receive waste in one year, to control methane and other explosive gases. The number of gas vents must number a minimum of one (1) per acre.

4.10.b. Gas Monitoring Program. -- Permittees of all SWLFs must implement an ongoing (routine) explosive gas monitoring program to ensure that the standards of subdivision 4.10.a of this rule are met. The type and frequency of monitoring must be approved by the ~~director~~Secretary and be based on the following factors:

4.10.b.1. Soil conditions;

4.10.b.2. Hydrogeologic conditions surrounding the facility, including the disposal area;

4.10.b.3. The hydraulic conditions surrounding the facility, including the disposal site; and

4.10.b.4. The location of the any manmade or other facility structures and property boundaries.

4.10.b.5. The minimum frequency of monitoring must be quarterly.

4.10.c. Notification. -- Upon detection of methane or other explosive gas levels exceeding the limits specified in subdivision 4.10.a of this rule, the landfill owner and the appropriate officials identified in the contingency plan must:

4.10.c.1. Immediately take all necessary steps to ensure the safety and protection of human health and must immediately notify the ~~director~~Secretary, and

4.10.c.2. 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.c.3. 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~~Secretary that the plan has been implemented.

4.10.c.4. The plan must describe the nature and extent of the problem and the proposed remedy.

4.10.c.5. The director may establish alternative schedules for demonstrating compliance with paragraphs 4.10.c.2, 4.10.c.3, and 4.10.c.4.

4.11. Groundwater Monitoring and Corrective Action Program.

4.11.a. Groundwater Monitoring Program. -- The groundwater sampling and analysis requirements for the groundwater monitoring system are as follows:

4.11.a.1. Groundwater Sampling and Analysis Requirements. -- The groundwater monitoring program submitted by the permittee must 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 paragraph 3.8.d.1 after approval by the ~~director~~Secretary. The permittee must retain a copy in the operating record. At a minimum, the program must include procedures and techniques for:

4.11.a.1.A. Sample collection;

4.11.a.1.B. Sample preservation and shipment;

4.11.a.1.C. Analytical procedures;

4.11.a.1.D. Chain of custody control;

and

4.11.a.1.E. Quality assurance and quality control.

4.11.a.2. 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 follow the approved quality assurance/quality control plan, and the ~~director~~Secretary will require resampling if he or she believes the samples were not properly sampled or analyzed.

4.11.a.2.A. Groundwater samples must not be field-filtered prior to laboratory analysis, except when monitoring for dissolved metals.

4.11.a.3. The permittee must determine groundwater flow rate and direction of groundwater in the uppermost significant aquifer at least annually.

4.11.a.3.A. The sampling procedures and frequency must be protective of human health and the environment.

4.11.a.4. The permittee 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 monitoring program. The minimum number of samples used to establish background groundwater quality must be consistent with the appropriate statistical procedures as specified in paragraph 4.11.a.7 of this rule.

4.11.a.5. Background quality at existing facilities may be based on sampling of wells that are not upgradient from the waste management area where:

4.11.a.5.A. Hydrogeologic conditions do not allow the permittee to

determine what wells are upgradient; and

4.11.a.5.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.a.5.C. Groundwater elevations must be measured in each well immediately prior to purging, each time groundwater is sampled.

4.11.a.5.D. The permittee must determine the rate and direction of groundwater flow each time groundwater is sampled.

4.11.a.5.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.a.5.F. The sampling procedures must be those specified under paragraph 4.11.b.2 for Phase I Detection Monitoring, paragraphs 4.11.c.2 and 4.11.c.3 for Phase II Assessment Monitoring, and subdivision 4.11.e for Corrective Action.

4.11.a.6. The permittee 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 monitoring programs. The permittee must make these statistical determinations each time he or she assesses groundwater quality.

4.11.a.6.A. In determining whether a statistically significant increase has occurred, the permittee 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.a.6.B. The permittee 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.a.7. 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.a.7.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.a.7.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.a.7.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.a.7.D. A control chart approach that gives control limits for each constituent.

4.11.a.7.E. Another statistical test method that meets the performance standards

of subparagraph 4.11.a.9.D may be utilized, provided that:

4.11.a.7.E.1. The permittee must place a justification for this alternative in the operating record and notify the director Secretary of the use of this alternative test; and

4.11.a.7.E.2. The justification must demonstrate that the alternative method meets the performance standards of paragraph 4.11.a.9.

4.11.a.8. The director Secretary may establish an alternative sampling procedure and statistical test for any of the constituents listed in Appendix I or II of this rule, as required to protect human health and the environment. Factors to consider for establishing this alternative statistical procedure include:

4.11.a.8.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 must be conducted to demonstrate that the normal distribution is not appropriate. Other tests must be conducted to demonstrate that the assumptions of the statistic or distribution are not grossly isolated;

4.11.a.8.B. Each parameter or constituent must be tested for separately. Each time that a test is done, the test for individual constituents 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.a.8.C. The statistical procedure must be appropriate for the behavior of the parameters or constituents involved. It must

include methods for handling data below the limit of detection. The permittee must 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.a.8.D. The statistical procedure used must account for seasonal and spatial variability and temporal correlation.

4.11.a.9. If contamination is detected by any of the statistical tests, and the director Secretary or permittee suspects that detection is an artifact caused by some feature of the data other than contamination, the director Secretary 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.a.9.A. The permittee must determine whether 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 paragraph 4.11.b.1 or 4.11.c.1 of this rule. The permittee must make these statistical determinations each time he or she assesses groundwater quality at the landfill.

4.11.a.9.B. In determining whether a statistically significant increase or decrease has occurred, the permittee must compare the groundwater quality of each parameter or constituent at each monitoring well designated pursuant to subparagraph 3.8.d.1.J to the background value of that parameter or constituent, according to the statistical procedures specified under subsection 4.11 of this rule.

4.11.a.9.C. Within a reasonable time period after completing sampling and analysis as determined by the director Secretary, the permittee must determine whether there has been a statistically significant increase over background at each monitoring well.

4.11.a.9.D. Any statistical method chosen under paragraph 4.11.a.7 must comply with the following performance standards, as appropriate:

4.11.a.9.D.1. The statistical method used to evaluate groundwater monitoring data must be appropriate for the distribution of chemical parameters or hazardous constituents.

4.11.a.9.D.2. 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.a.9.D.3. If the distributions for the constituents differ, more than one statistical method may be needed.

4.11.a.9.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 must be done at a Type I error level no less than 0.01 for each testing period.

4.11.a.9.E.1. If a multiple comparisons procedure is used, the Type I experiment wise error rate for each testing period 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.a.9.E.2. This performance standard does not apply to tolerance intervals, prediction intervals, or control charts.

4.11.a.9.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.a.9.F.1. 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.a.9.G. If a tolerance interval or a prediction 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.a.9.G.1. 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.a.9.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.a.9.H.1. 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 be a concentration level less than the mcl referenced in Appendix III to this rule.

4.11.a.9.I. If necessary, the statistical method must include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.

4.11.a.10. Once established at a SWLF, groundwater monitoring 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.a.11. The permittee may request the director Secretary to establish an alternative schedule(s) for demonstrating compliance with subdivision 3.8.d, pertaining to notification of placement of certification in the operating record; subdivisions 4.11.b pertaining to notification that statistically significant increase (SSI) notice is in the operating record; subdivision 4.11.b and paragraph 4.11.c.2, pertaining to an assessment monitoring program; subdivision 4.11.c, pertaining to sampling and analyzing Appendix II constituents; subparagraph 4.11.c.4.B pertaining to placement of notice (Appendix II constituents detected) in the operating record and notification of notice in the operating record; paragraph 4.11.c.7, pertaining to sampling for Appendix I and II to this part; paragraph 4.11.c.7, pertaining to notification (and placement of notice in operating record) of SSI above groundwater protection standard; subdivisions 4.11.e and 4.11.f, pertaining to assessment of corrective measures; subdivision 4.11.g, pertaining to selection of remedy and notification of placement in the operating record; subdivision 4.11.g pertaining to notification of placement in the operating record (alternative corrective action measures); and subdivision 4.11.g, pertaining to notification of placement in the operating record (certification of remedy completed).

4.11.b. Phase I Detection Monitoring Program.

4.11.b.1. Program Requirements. -- A Phase I Detection Monitoring Program is required for all groundwater monitoring wells at all landfills and solid waste disposal surface impoundments except as otherwise provided in this rule and in subdivision 4.11.c of this rule.

4.11.b.2. At a minimum, a Phase I detection monitoring program for commercial solid waste facilities shall must include the monitoring parameters listed in Appendix I, or as specified in the facility permit, or order of the

director Secretary. For Class F solid waste facilities, the director Secretary shall will 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 must be submitted to the director Secretary as part of the permit application process. For coal combustion by-product facilities, the monitoring parameters shall must 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.b.2.A. The director Secretary 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.b.2.B. The director Secretary 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.b.2.B.1. In determining alternative parameters, the director Secretary may consider the following factors:

4.11.b.2.B.1.(a) The types, quantities, and concentrations of constituents in waste managed at the SWLF;

4.11.b.2.B.1.(b) The mobility, stability, and persistence of waste constituents or their reaction products in the unsaturated

zone beneath the SWLF;

4.11.b.2.B.1.(c) The detectability of indicator parameters, waste constituents, and reaction products in the groundwater; and

4.11.b.2.B.1.(d) The concentration or values and coefficients of variation of monitoring parameters or constituents in the groundwater background.

4.11.b.3. Phase I Sampling and Analysis Procedures.

4.11.b.3.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 Secretary may require more frequent monitoring on a site-specific basis by considering aquifer flow rate and existing quality of the groundwater.

4.11.b.3.B. A minimum of four independent samples from each well (background and downgradient) must be collected and analyzed in accordance with subparagraph 4.11.b.2.B, during the first semiannual sampling event.

4.11.b.3.C. At least one sample from each well (background and downgradient) must be collected and analyzed during subsequent semiannual sampling events.

4.11.b.3.D. The director Secretary may specify an appropriate alternative frequency for repeated sampling and analysis for Appendix I constituents, or the alternative list approved in accordance with subparagraph 4.11.b.2.B, during the active life (including closure) and the post-closure care period.

4.11.b.3.E. The alternative frequency during the active life (including closure) must be no less than annual.

4.11.b.3.F. The alternative frequency must be based on consideration of the following

factors:

4.11.b.3.F.1. Lithology of the aquifer and unsaturated zone;

4.11.b.3.F.2. Hydraulic conductivity of the aquifer and unsaturated zone;

4.11.b.3.F.3. Groundwater flow rates;

4.11.b.3.F.4. Minimum distance between upgradient edge of the SWLF and downgradient monitoring well screen (minimum distance of travel); and

4.11.b.3.F.5. Resource value of the aquifer.

4.11.b.4. Unless otherwise directed by the director Secretary, if the permittee determines, pursuant to this rule, that there is a statistically significant increase over background for one or more of the constituents listed in Appendix I to this rule, or in the alternative list approved in accordance with subparagraph 4.11.b.2.B, Phase I parameter at the boundary specified under subparagraph 3.8.d.1.J the permittee must:

4.11.b.4.A. Within 14 days of this finding, the permittee must place a notice in the operating record indicating which constituents have shown statistically significant changes from background levels, and notify the director Secretary that this notice was placed in the operating record;

4.11.b.4.B. Within a thirty-day period, repeat the sampling of the groundwater in all appropriate monitoring wells as approved by the director Secretary, and determine the concentration of all constituents designated under paragraph 4.11.b.2 of this rule that are present in the groundwater; and

4.11.b.4.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.b.4.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 subdivision 4.11.c of this rule within ninety 90 days of confirmation, except as provided for in paragraph 4.11.b.3.

4.11.b.5. Other Source Determination.

4.11.b.5.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 Secretary and be placed in the operating record.

4.11.b.5.B. If the director Secretary agrees that a successful demonstration has been made and documented, the permittee may resume Phase I Detection Monitoring as specified in this subparagraph.

4.11.b.5.C. If, after 90 days, a successful demonstration has not been made, the permittee must continue a Phase II Assessment Monitoring Program as required in subdivision 4.11.c.

4.11.c. Phase II Assessment Monitoring Program.

4.11.c.1. 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 or more constituent listed in Appendix I or in the alternative list approved by the director Secretary in accordance with subparagraph 4.11.b.2.B.

4.11.c.2. Phase II Sampling and Analysis Procedures. -- A Phase II monitoring program

must include semiannual monitoring of all constituents identified in Appendix II of this rule in addition to specified Phase I parameters, or in the case of Class F solid waste facilities, those specified by the director Secretary unless waived by the director Secretary upon request of the permittee.

4.11.c.2.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.c.2.B. A minimum of one sample from each downgradient well must be collected and analyzed during each sampling event.

4.11.c.2.C. For any constituent detected in the downgradient wells as the result of the complete Phase 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.c.2.D. The director Secretary may specify an appropriate subset of wells to be sampled and analyzed for Phase II constituents during assessment monitoring.

4.11.c.2.E. The director Secretary 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.c.2.F. For those Phase II constituents that are determined to be below the detectable limits of the standard analytical methods, the director Secretary may reduce the required monitoring frequency. In no case may the monitoring frequency be less than once per year.

4.11.c.2.G. 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 may petition the director Secretary for a reinstatement of the Phase I monitoring program. Within ninety (90) days of the receipt of such a petition, the director Secretary may either approve or deny the petition and notify the permittee of the decision in writing.

4.11.c.3. The director Secretary may specify an appropriate alternative frequency for repeated sampling and analysis for the full set of Appendix II constituents required by paragraph 4.11.c.2 of this rule, during the active life (including closure) and post-closure care of the SWLF considering the following factors:

4.11.c.3.A. Lithology of the aquifer and unsaturated zone;

4.11.c.3.B. Hydraulic conductivity of the aquifer and unsaturated zone;

4.11.c.3.C. Groundwater flow rates;

4.11.c.3.D. Minimum distance between upgradient edge of the SWLF and downgradient monitoring well screen (minimum distance of travel);

4.11.c.3.E. Resource value of the aquifer; and

4.11.c.3.F. Nature (fate and transport) of any constituents detected in response to this subparagraph.

4.11.c.4. Recording and resampling

4.11.c.4.A. After obtaining the results from the initial or subsequent sampling events required in paragraph 4.11.c.2, 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 Secretary that this notice has been placed in the operating record;

4.11.c.4.B. Required Permittee

Resampling Procedures for Phase II Events.

4.11.c.4.B.1. Within 90 days, and on at least a semiannual basis thereafter, resample all wells specified by subdivision 3.8.d the permittee must conduct analyses for all constituents in Appendix I to this rule or in the alternative list approved in accordance with subdivision 4.11.b and for those constituents in Appendix II to this rule that are detected in response to paragraph 4.11.b.3 and record their concentrations in the facility operating record.

4.11.c.4.B.2. At least one sample of each well (background and downgradient) must be collected and analyzed during these sampling events.

4.11.c.4.B.3. The director Secretary may specify an alternative monitoring frequency during the active life (including closure) and post-closure period for the constituents referred to in this part.

4.11.c.4.B.4. The alternative frequency for Appendix I constituents, or the alternative list approved in accordance with subparagraph 4.11.b.2.B, during the active life (including closure) must be no less than annual.

4.11.c.4.B.5. The alternative frequency must be based on consideration of the factors specified in paragraph 4.11.c.3.

4.11.c.4.C. Establish background concentrations for any constituents detected pursuant to paragraph 4.11.c.2 or 4.11.c.4, and

4.11.c.4.D. Groundwater Protection Standards.

4.11.c.4.D.1. Establish groundwater protection standards for all constituents detected pursuant to paragraph 4.11.c.2 or 4.11.c.4.

4.11.c.4.D.2. The groundwater protection standards must be established in accordance with paragraph 4.11.c.8 or 4.11.c.9.

4.11.c.5. If the concentrations of all Phase II constituents are shown to be at or below background values, using the statistical procedures in paragraphs 4.11.a.7 and 4.11.a.8 of this rule, for two consecutive sampling events, the permittee must notify the ~~director~~Secretary of this finding and may return to Phase I detection monitoring.

4.11.c.6. If the concentrations of any Phase II constituents are above background values, but all concentrations are below the groundwater protection standard established under paragraphs 4.11.c.8 or 4.11.c.9, using the statistical procedures in paragraphs 4.11.a.7 and 4.11.a.8 of this rule, the permittee must continue assessment monitoring in accordance with this paragraph.

4.11.c.7. Statistically Significant Level Above Groundwater Protection Standards.

4.11.c.7.A. If one or more Phase II constituents are detected at statistically significant levels above groundwater protection standard established under paragraph 4.11.c.8, or 4.11.c.9, in any sampling event, the permittee must, within 14 days of this finding, place a notice in the operating record identifying the Phase II constituents that have exceeded the groundwater protection standard and notify the ~~director~~Secretary and all appropriate local government officials that the notice has been placed in the operating record. The permittee must also:

4.11.c.7.A.1. Characterize the nature and extent of the release by installing additional monitoring wells as necessary;

4.11.c.7.A.2. Install at least one additional monitoring well at the facility boundary in the direction of contaminant migration and sample this well in accordance with subparagraph 4.11.c.4.B;

4.11.c.7.A.3. Notify all persons who own the land or reside on the land that directly overlies any part of the plume of contamination if

contaminants have migrated off-site if indicated by sampling of wells in accordance with paragraph 4.11.c.7; and

4.11.c.7.A.4. Initiate an assessment of corrective measures as required by subdivision 4.11.e of this rule within 90 days; or

4.11.c.7.B. Other Source of Statistically Significant Increase (SSI) Determination.

4.11.c.7.B.1. 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.c.7.B.2. A report documenting this demonstration must be certified by a qualified groundwater scientist and approved by the ~~director~~ Secretary of an approved state and placed in the operating record.

4.11.c.7.B.3. If the ~~director~~Secretary agrees that a successful demonstration has been made the permittee must continue monitoring in accordance with the assessment (Phase II) monitoring program pursuant to subdivision 4.11.c, and may return to Phase I detection monitoring if the Phase II constituents upon resampling are at or below background as specified in paragraph 4.11.c.5.

4.11.c.7.B.4. Until the ~~director~~Secretary agrees that a successful demonstration has been made, the permittee must continue to comply with paragraph 4.11.c.7 including initiating an assessment of corrective measures.

4.11.c.8. Establishment of Groundwater Protection Standards.

4.11.c.8.A. The permittee must establish a groundwater protection standard for each Phase II constituent detected in the

groundwater.

4.11.c.8.B. The groundwater protection standard must be as follows:

4.11.c.8.B.1. For constituents for which a maximum contaminant level (MCL) has been promulgated under section 1412 of the Safe Drinking Water Act (codified) under 40CFR141, or groundwater standards listed under 46CSR12, or the MCL for that constituent;

4.11.c.8.B.2. For constituents for which MCLs have not been promulgated, the background concentration for the constituent established from wells in accordance with subdivision 3.8.d; or

4.11.c.8.B.3. For constituents for which the background level is higher than the MCL identified under paragraph 4.11.c.8, or health-based levels, identified under paragraph 4.11.c.9 for the background concentration.

4.11.c.9. Alternative Groundwater Protection Standards.

4.11.c.9.A. The ~~director~~Secretary may consider an alternative groundwater protection standard in consultation with the environmental water quality board pursuant to 47CSR57 for constituents for which water quality standards have not been established.

4.11.c.9.B. These groundwater protection standards must be appropriate health-based levels that satisfy the following criteria:

4.11.c.9.C. The level is derived in a manner consistent with EPA guidelines for assessing the health risks of environmental pollutants (51CFR33992, 34006, 34014, 34028, September 24, 1986);

4.11.c.9.D. The level is based on scientifically valid studies conducted in accordance with the Toxic Substances Control Act, Good Laboratory Practice Standards (40CFR792) or equivalent;

4.11.c.9.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.c.9.F. Systemic Toxicants.

4.11.c.9.F.1. 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.c.9.F.2. For purposes of this part, systemic toxicants include toxic chemicals that cause effects other than cancer or mutation.

4.11.c.10. In establishing groundwater protection standards under paragraph 4.11.c.9, the ~~director~~Secretary may consider the following:

4.11.c.10.A. Multiple contaminants in the groundwater;

4.11.c.10.B. Exposure threats to sensitive environmental receptors; and

4.11.c.10.C. Other site-specific exposure or potential exposure to groundwater.

4.11.d. (Reserved)

4.11.e. Assessment of Corrective Measures. -- Whenever a statistically significant increase is found in a Phase II monitoring parameter, or when groundwater contamination is otherwise identified by the ~~director~~Secretary at sites without monitoring programs, which is determined by the ~~director~~Secretary to have resulted in a significant adverse effect on an aquifer, and which is attributable to a solid waste facility, the ~~director~~Secretary may require appropriate corrective or remedial action pursuant to W. Va. Code §§22-11, 12 and 15 to abate,

remediate or correct such pollution. Any such corrective or remedial action order must take into account any applicable groundwater quality protection standards and/or background groundwater quality, pursuant to the requirements of the Groundwater Protection Act, §22-12-1 et seq., 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.e.1. 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 paragraph 4.11.c.8 or 4.11.c.9 of this rule, the permittee must initiate an assessment of corrective measures.

4.11.e.1.A. Such an assessment must be completed within a period of time as agreed to in writing by the ~~director~~Secretary.

4.11.e.2. The permittee must continue to monitor in accordance with the assessment monitoring program as specified in subdivision 4.11.c.

4.11.e.3. 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 subdivision 4.11.f, addressing at least the following:

4.11.e.3.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.e.3.B. The time required to begin and complete the remedy;

4.11.e.3.C. The costs of remedy implementation; and

4.11.e.3.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.e.4. 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.f. Selection of Remedy.

4.11.f.1. Based on the results of the corrective measures assessment conducted under subdivision 4.11.e the permittee must select a remedy that, at a minimum, meets the standards listed in paragraph 4.11.f.2.

4.11.f.1.A. The permittee must notify the ~~director~~Secretary, 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 paragraph 4.11.f.2.

4.11.f.2. Remedies must:

4.11.f.2.A. Be protective of human health and the environment and maintain existing groundwater quality, pursuant to the requirements of the Groundwater Protection Act, W. Va. Code §22-12-1 et seq.;

4.11.f.2.B. Attain the groundwater protection standard as specified pursuant to paragraphs 4.11.c.8 or 4.11.c.9;

4.11.f.2.C. Control the source(s) of releases so as to reduce or eliminate further releases of Phase II constituents into the environment; and

4.11.f.2.D. Comply with standards for management of wastes as specified in paragraph 4.11.g.4.

4.11.f.3. In selecting a remedy that meets the standards of paragraph 4.11.f.2, the permittee must consider the following evaluation factors:

4.11.f.3.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.f.3.A.1. Magnitude of reduction of existing risks;

4.11.f.3.A.2. Magnitude of residual risks in terms of likelihood of further releases due to waste remaining following implementation of a remedy;

4.11.f.3.A.3. The type and degree of long-term management required, including monitoring, operation, and maintenance;

4.11.f.3.A.4. 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.f.3.A.5. Time until full protection is achieved;

4.11.f.3.A.6. 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.f.3.A.7. Long-term reliability of the engineering and institutional controls; and

4.11.f.3.A.8. Potential need for replacement of the remedy.

4.11.f.3.B. The effectiveness of the remedy in controlling the source to reduce further releases based on consideration of the following factors:

4.11.f.3.B.1. The extent to which containment practices will reduce further

releases;

4.11.f.3.B.2. The extent to which treatment technologies may be used;

4.11.f.3.C. The ease or difficulty of implementing a potential remedy(ies) based upon consideration of the following types of factors:

4.11.f.3.C.1. Degree of difficulty associated with constructing the technology;

4.11.f.3.C.2. Expected operational reliability of the technologies;

4.11.f.3.C.3. Need to coordinate with and obtain necessary approvals and permits from other agencies;

4.11.f.3.C.4. Availability of necessary equipment and specialists; and

4.11.f.3.C.5. Available capacity and location of needed treatment, storage, and disposal services.

4.11.f.3.D. Practicable capability of the permittee, including a consideration of the technical and economic capability.

4.11.f.3.E. The degree to which community concerns are addressed by a potential remedy(ies).

4.11.f.4. The permittee must specify as part of the selected remedy a schedule(s) for initiating and completing remedial activities.

4.11.f.4.A. Such a schedule must require the initiation of remedial activities within period of time agreed to in writing by the ~~director~~Secretary, taking into consideration the factors set forth in paragraph 4.11.f.4.

4.11.f.4.B. The permittee must consider the following factors in determining the schedule of remedial activities:

4.11.f.4.B.1. Extent and nature of contamination;

4.11.f.4.B.2. Practical capabilities of remedial technologies in achieving compliance with groundwater protection standards established under paragraph 4.11.c.7 or 4.11.c.8 and other objectives of the remedy;

4.11.f.4.B.3. Availability of treatment or disposal capacity for wastes managed during implementation of the remedy;

4.11.f.4.B.4. Desirability of utilizing technologies that are not currently available, but which may offer significant advantages over already available technologies in terms of effectiveness, reliability, safety, or ability to achieve remedial objectives;

4.11.f.4.B.5. Potential risks to human health and the environment from exposure to contamination prior to completion of the remedy;

4.11.f.4.B.6. The hydrogeologic characteristics of the facility and the surrounding land, and aquifer including:

4.11.f.4.B.6.(a) Current and future uses;

4.11.f.4.B.6.(b) Proximity and withdrawal rate of users;

4.11.f.4.B.6.(c) Groundwater quantity and quality;

4.11.f.4.B.6.(d) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituent(s);

4.11.f.4.B.6.(e) Groundwater removal and treatment costs; and

4.11.f.4.B.6.(f) The cost and availability of alternative water supplies.

4.11.f.4.B.7. Practicable capability of

the permittee.

4.11.f.4.B.8. Other relevant factors.

4.11.f.5. The ~~director~~Secretary may determine that remediation of a release of a Phase II constituent from a SWLF is not necessary if the permittee demonstrates to the satisfaction of the ~~director~~Secretary that:

4.11.f.5.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.f.5.B. The constituent(s) is present in groundwater that:

4.11.f.5.B.1. Is not currently or reasonably expected to be a source of drinking water; and

4.11.f.5.B.2. Is not hydraulically connected with waters to which the hazardous constituents are migrating or are likely to migrate in a concentration(s) that would exceed the groundwater protection standards established under paragraph 4.11.c.8 or 4.11.c.9; or

4.11.f.5.C. Remediation of the release(s) is technically impracticable; or

4.11.f.5.D. Remediation results in unacceptable cross-media impacts.

4.11.f.6. A determination by the ~~director~~Secretary pursuant to paragraph 4.11.f.5 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.g. Implementation of the Corrective Action Program.

4.11.g.1. Based on the schedule established under paragraph 4.11.f.4 for initiation and completion of remedial activities the permittee must:

4.11.g.1.A. Establish and implement a corrective action groundwater monitoring program that:

4.11.g.1.A.1. At a minimum, meet the requirements of an assessment monitoring program under subdivision 4.11.c;

4.11.g.1.A.2. Indicate the effectiveness of the corrective action remedy; and

4.11.g.1.A.3. Demonstrate compliance with the Groundwater Protection Act, W. Va. Code §22-12-1 et seq., and/or the groundwater standard pursuant to paragraph 4.11.g.5.

4.11.g.1.B. Implement the corrective action remedy selected under subdivision 4.11.f; and

4.11.g.1.C. Take any interim measures necessary to ensure the protection of human health and the environment.

4.11.g.1.C.1. 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 subdivision 4.11.f.

4.11.g.1.C.2. The following factors must be considered by a permittee in determining whether interim measures are necessary:

4.11.g.1.C.2.(a) Time required to develop and implement a final remedy;

4.11.g.1.C.2.(b) Actual or potential

exposure of nearby populations or environmental receptors to hazardous constituents;

4.11.g.1.C.2.(c) Actual or potential contamination of drinking water supplies or sensitive ecosystems;

4.11.g.1.C.2.(d) Further degradation of the groundwater that may occur if remedial action is not initiated expeditiously;

4.11.g.1.C.2.(e) Weather conditions that may cause hazardous constituents to migrate or be released;

4.11.g.1.C.2.(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.g.1.C.2.(g) Other situations that may pose threats to human health and the environment.

4.11.g.2. A permittee may determine, based on information developed after implementation of the remedy has begun or other information, that compliance with requirements of paragraph 4.11.f.2 are not being achieved through the remedy selected.

4.11.g.2.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 paragraph 4.11.g.3.

4.11.g.3. If the permittee determines that compliance with requirements under paragraph 4.11.f.2 of this rule cannot be practically achieved with any currently available methods, the permittee must:

4.11.g.3.A. Obtain certification of a qualified groundwater scientist and approval by ~~director~~Secretary that compliance with

requirements under paragraph 4.11.f.2 cannot be practically achieved with any currently available methods;

4.11.g.3.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.g.3.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.g.3.C.1. Technically practicable; and

4.11.g.3.C.2. Consistent with the overall objective of the remedy.

4.11.g.3.D. Notify the ~~director~~Secretary 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.g.4. All solid wastes that are managed pursuant to a remedy required under subdivision 4.11.f, or an interim measure required under subparagraph 4.11.g.1.C must be managed in a manner:

4.11.g.4.A. That is protective of human health and the environment; and

4.11.g.4.B. That complies with applicable RCRA requirements.

4.11.g.5. Remedies selected pursuant to subdivision 4.11.f must be considered complete when:

4.11.g.5.A. The permittee complies with the groundwater protection standards established under paragraph 4.11.c.8 or 4.11.c.9 at all points within the plume of contamination that lie beyond the groundwater monitoring well system

established under subdivision 3.8.4 and paragraph 3.8.4.a.

4.11.g.5.B. Compliance with the groundwater protection standards established under paragraph 4.11.c.8 or 4.11.c.9 have been achieved by demonstrating that concentrations of Phase 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 paragraphs 4.11.a.7 and 4.11.a.8 of this rule.

4.11.g.5.B.1. The ~~director~~Secretary may specify an alternative length of time during which the permittee must demonstrate that concentrations of Phase II constituents have not exceeded the groundwater protection standard(s) taking into consideration:

4.11.g.5.B.1.(a) Extent and concentration of the release(s);

4.11.g.5.B.1.(b) Behavior characteristics of the hazardous constituents in the groundwater;

4.11.g.5.B.1.(c) Accuracy of monitoring or modeling techniques, including any seasonal, meteorological, or other environmental variabilities that may affect the accuracy; and

4.11.g.5.B.1.(d) Characteristics of the groundwater.

4.11.g.5.C. All actions required to complete the remedy have been satisfied.

4.11.g.6. Upon completion of the remedy, the permittee must notify the ~~director~~Secretary within 14 days that a certification that the remedy has been completed in compliance with the requirements of paragraph 4.11.g.5 has been placed in the operating record.

4.11.g.6.A. The certification must be signed by the permittee and by a qualified

groundwater scientist and approved by the ~~director~~Secretary.

4.11.g.7. When, upon completion of the certification, the ~~director~~Secretary determines that the corrective action remedy has been completed in accordance with the requirements under paragraph 4.11.g.5, the permittee must be released from the requirements for financial assurance for corrective action under part 3.13.p.

4.11.h. A copy of each report required by section 4.11 must be kept on file at the solid waste facility.

4.12. Reporting.

Anomalous events. -- Each anomalous event, that has the potential of affecting human health or the environment must be reported to a person designated by the Secretary. The anomalous event must be reported by telephone, fax, or e-mail immediately upon discovery, or as soon thereafter as necessary emergency response permits. Within 48 hours of the discovery of the event, or before 5:00 p.m. of the second following business day, whichever comes later, a photocopy of the daily log documenting the anomalous event and the immediate response to it, and such additional information as necessary to describe the event and the current situation, must be submitted to a person and place designated by the Secretary. The Secretary may require additional reports on the anomalous event.

4.12.a. Daily Logs. -- Accurate, complete and true daily logs must be kept by the operator describing the type, amount, and source 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.a.1. A description of waste handling problems or emergency disposal activities;

4.12.a.2. A record of deviations from the approved design or operational plans; and

4.12.a.3. A record of actions taken to correct violations of the Act, other state Acts, and the ~~Division~~ Department's rules and regulations.

~~4.12.b. Tonnage and Monitoring Reports:~~

~~4.12.b.1. Monthly Solid Waste Tonnage Reports:~~

~~4.12.b.1.A:~~ 4.12.b. Solid Waste Tonnage Reports. Monthly solid waste tonnage reports describing the type, amount, and source received at the solid waste facility for the month must be submitted to the ~~director~~Secretary postmarked ~~before~~ by the twentieth day of the following month, on forms, and/or electronic medium obtained from the ~~director~~Secretary, and completed in compliance with any instructions or guidance provided by the ~~director~~ Department. A copy must also be submitted to the Department's Solid Waste Management Board, the West Virginia Public Service Commission (WVPSC), and applicable county or regional solid waste authority.

~~4.12.b.1.B:~~ 4.12.b.1. The monthly tonnage report must also include results of document the hazardous waste exclusion efforts as required by subparagraph 4.6.a.1.F of this rule, and the results of those efforts.

4.12.b.2. The monthly tonnage report must be legible, and contain the original signature of the principal officer in charge of the facility. The official copy of the tonnage reports may not be faxed or electronically mailed to the Department.

4.12.b.3. The monthly tonnage report must clearly identify the out of shed waste, and the total waste from each state including West Virginia. The report must also list the tax-exempt tonnage and any other tonnage that does not count against the facility's monthly capacity. Free day tonnage must be included in each monthly report.

4.12.b.4. Facilities that use shredded waste tires as alternative daily cover must include that tonnage in each monthly tonnage report, as required by 33CSR5, paragraph 3.1.e.5.

~~4.12.b.2.~~4.12.c. Groundwater Monitoring Reports. The Secretary may specify the dates by which each landfill must submit particular documents required by subsection 4.11 of this rule, "Groundwater Monitoring and Corrective Action Program."

~~4.12.b.2.A. The groundwater 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 subsection 4.11 of this rule must be submitted with the monthly solid waste reports due before the twentieth day of April, July, October, and January.~~

~~4.12.b.3.~~4.12.d. Surface Water Monitoring Reports. -- The surface water sampling analysis monitoring reports must be submitted as required by §22-11-1 et seq. and the rules promulgated thereunder.

~~4.12.b.4.~~4.12.e. Leachate Monitoring Reports. -- The leachate sampling analysis monitoring reports must be submitted as required by §22-11-1 et seq. and the rules promulgated thereunder.

~~4.12.b.5.~~4.12.f. Reporting and Recordkeeping. -- A copy of the monthly tonnage and the monitoring reports must also be sent to the county or regional solid waste authority for the county or counties in which the solid waste came from. Copies of all of the reports required by this paragraph must be kept on file at the solid waste facility.

~~4.12.c.~~4.12.g. Annual Operational Report. -- An annual solid waste facility operational report must be submitted for the current calendar year

to the ~~director~~Secretary before January 31 of the following year.

~~4.12.c.1.~~4.12.g.1. The report must include:

~~4.12.c.1.A.~~4.12.g.1.A. Updated list of users of the facility;

~~4.12.c.1.B.~~4.12.g.1.B. Summary of the daily logs of solid waste received during the previous year;

~~4.12.c.1.C.~~4.12.g.1.C. Summary of the previous year's surface and groundwater monitoring activities; and

~~4.12.c.1.D.~~4.12.g.1.D. A brief narrative describing the status of development, construction, maintenance, expansion, and closure of all facilities or portion of facilities that are a part of the approved solid waste facility.

~~4.12.c.2.~~4.12.h. The annual solid waste facility operational report for landfills must also include:

~~4.12.c.2.A.~~4.12.h.1. 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.c.2.B.~~4.12.h.2. Cross-sections of the area that has been filled; and

~~4.12.c.2.C.~~4.12.h.3. Computations estimating the volume ~~of the area~~ that has been filled, and the remaining volume ~~of the remaining and~~ useful life of the facility, in months.

4.12.i. The Secretary may specify the medium (e.g., paper, Internet, electronic transmission, optical media, etc.) and the format (e.g., forms, outlines, guidelines, electronic data structures, etc.) in which documents are submitted pursuant to this rule.

4.13. Acceptance and Handling of Special Solid Wastes.

4.13.a. General.

4.13.a.1. Except as expressly specified by an order or other written approval by the ~~director~~Secretary, a solid waste facility may receive only those 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 director~~, or by specific provisions within the facility permit, by obtaining a minor permit modification, or by obtaining other express written approval from the Secretary. If it is not clear that a particular waste is within the authorized wastes that a permitted facility may receive, the permittee must request and receive a minor permit modification or a letter of permission from the ~~director~~Secretary before receiving the waste.

4.13.a.2. Nothing must limit or affect the power of the ~~director~~Secretary to prohibit or require special handling requirements determined to be necessary to protect the environment or the health, safety, and welfare of the public.

4.13.a.3. 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 ~~director~~Secretary would be required before permitted solid waste management facilities could receive and dispose of the products.

4.13.a.3.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~~Secretary.

4.13.a.3.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, the permittee must demonstrate that the waste is suitable for disposal at his/her facility. The permittee must submit, on in a medium and a format specified forms provided by the ~~director~~Secretary, a detailed description of the process by which the waste was generated, description of the waste, and satisfactory characterization of the composition of the waste, the waste matrix, and the contaminants. (Usually the characterization will include chemical analytical results and/or material safety data sheets.) Any solid waste landfill which is granted approval to accept special waste for disposal special waste that might contain volatile organic compounds, 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~~ Department of Environmental Protection.

4.13.b. Asbestos Wastes. -- The permittee must ensure that every individual involved in the management of wastes is protected from exposure in conformance with the provisions of this rule and other applicable state and federal statutes, rules and regulations.

4.13.b.1. Packaging of Friable and Nonfriable Category II Asbestos Materials. -- All solid wastes that may contain friable or nonfriable category II asbestos 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." The name and address of the generator 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 is, or will be achieved. Such alternative methods must only be considered where bagging, wrapping, or packaging is proven not to be possible.

4.13.b.2. Transportation of Friable Asbestos Materials for Disposal. -- Properly packaged asbestos wastes must 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 source, and its destination.

4.13.b.3. Disposal of Friable and Nonfriable Asbestos Materials. -- Asbestos waste must be disposed in a special purpose landfill or in a special area of a landfill, and must meet the following conditions:

4.13.b.3.A. Asbestos waste must be placed in a lined area designed and constructed to meet the minimum liner requirements set forth in subdivision 5.4.b of this rule.

4.13.b.3.B. Asbestos waste must be hand placed in the trench or cell or by other means approved by the ~~director~~Secretary which ensure integrity of bags, wrappings, or containers.

4.13.b.3.C. Asbestos waste 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 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.b.3.D. Asbestos waste 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 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, must be graded for erosion prevention and revegetated.

4.13.b.3.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, must be fenced, or a waiver from the ~~director~~Secretary must be obtained. Provided; That a natural barrier exists on the site that adequately deters access by the general public. The fence must be of the six (6) feet high chain link type with three (3) strands of barbed wire on top. The fence must completely encompass the disposal area and internal buffer zone and maintain access control through locked gates.

4.13.b.3.F. The fence 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.b.3.G. A plat of the area, surveyed and clearly marked as containing asbestos waste must be provided to the ~~director~~Secretary upon request and must be contained and specifically noted in the deed notation as required by subdivision 6.2.f of this rule.

4.13.b.3.H. Asbestos waste 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 ~~director~~Secretary, in such a manner as to maximize the prevention of wind and water erosion of the asbestos disposal area.

4.13.b.3.I. The fenced area of the

asbestos disposal facility must not be located closer than fifty (50) feet to the property boundary or building or structure.

4.13.b.3.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.c. Liquids. -- Free liquids cannot be disposed of in a landfill. Free liquids and poorly-contained liquids must be absorbed on solid material before being placed in a landfill.

4.13.c.1. Permittees must not place bulk or noncontainerized liquid waste in SWLF unless:

4.13.c.1.A. The waste is household waste other than septic waste; or

4.13.c.1.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 subparagraph 4.5.d.1.A of this rule.

4.13.c.1.C. The Permittee must place the demonstration in the operating record and notify the ~~director~~Secretary that it has been placed in the operating record.

4.13.c.2. Permittees must not place containers holding liquid waste in a SWLF unless:

4.13.c.2.A. The container is a small container similar in size to that normally found in household waste;

4.13.c.2.B. The container is designed to hold liquids for use other than storage; or

4.13.c.2.C. The waste is household waste.

4.13.d. Tires. Tires must be managed in accordance with the Waste Tire Management Rule, 33CSR5.

4.13.e. Drums. -- Except as provided in paragraph 4.13.e.1 of this rule, drums and other bulk containers must not be disposed until emptied and crushed. Pesticide containers must be triple rinsed before disposal.

4.13.e.1. Fiber drums of asbestos which are to be disposed of in designated asbestos disposal areas in accordance with the provisions of subdivision 4.13.b of this rule need not be either emptied or crushed.

4.13.f. 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 schedule may be approved by the ~~director~~Secretary.

4.13.g. Infectious Waste. -- Infectious waste as defined in section 2 of this rule, must not be disposed of in a landfill except in accordance with paragraph 4.7.b.6 of this rule. Nonhazardous bottom ash from the incineration of infectious waste must not be considered infectious waste.

4.13.h. Sewage Sludges and Sewage Sludge.

4.13.h.1. Sewage Sludges disposed at a landfill 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 ~~director~~Secretary prior to disposal. Alternative sludge disposal methods can be utilized upon obtaining written approval from the ~~director~~Secretary.

4.13.h.2. Sewage Sludges 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.h.3. The ~~Division~~ Department may require the landfill operator to periodically sample and analyze incoming sewage sludge.

4.13.i. Shredder Fluff. -- Shredder fluff

must not be disposed of in any facility unless specifically approved in writing by the ~~director~~Secretary.

4.13.j. Municipal Incinerator Ash. -- Ash from municipal incinerators must be disposed of on a liner system that conforms to the requirements of 33CSR20.

4.13.k. Petroleum-Contaminated Soils. -- Soils contaminated with petroleum must be disposed of in a manner prescribed by the ~~director~~Secretary.

4.14. Monthly Free Disposal Day ("Free Day").

4.14.a. Definitions. - For the purposes of this subsection:

4.14.a.1. "Residential solid waste" means garbage, rubbish, trash, furniture, household appliances and other similar wastes not herein specified, generated at residential property, ~~not herein specified~~.

4.14.a.2. "One (1) pick-up truckload, or its equivalent" means a vehicle manufacturers specified or recommended cargo weight rating. The cargo weight rating does not include the weight of the vehicle, fuel and passengers. For example, a one half-ton pick-up truck may have a cargo weight rating of 1100 pounds, and a one-ton pick-up truck may have a cargo weight rating of 2000 pounds.

4.14.b. Applicability.

4.14.b.1 All commercial and public landfills ~~shall~~ must establish and publish a yearly schedule providing for one (1) day per month on which a person not in the business of hauling or disposing of solid waste, may dispose of, in a solid waste landfill facility, an amount of residential solid waste, up to one (1) pick-up truckload or its equivalent, free of all charges and fees.

4.14.b.2. Any person who is not a resident of West Virginia may only participate in the free

day upon proof that his or her state of residence would otherwise allow West Virginia residents to dispose of residential solid waste in the same or substantially similar manner.

4.14.c. Requirements.

4.14.c.1 All commercial landfills, both private and public landfills shall must submit and receive prior approval from the Department of the landfill facilities' proposed monthly free day schedule. The proposed monthly free day schedule must be approved twenty (20) days prior to the initial date of publication each calendar year. The date of the proposed free day schedule for each consecutive month must be separated by at least twenty (20) calendar days. Following the publication, the landfill facility must submit to the ~~director~~Secretary and the Department's Solid Waste Management Board a copy of the established and published yearly schedule of the free day within 15 days of publication. The yearly schedule ~~shall~~ must be posted at the facility and must be clearly visible and legible to ~~all customers~~.

4.14.c.2. Landfill facilities ~~shall~~ must not give preferential treatment to either paying or non-paying customers on free day. However, landfill facilities may place rolloffs or other similar containers for use by free day customers in order to maintain normal daily operations.

4.14.c.3. Hours of operation on free day ~~shall~~ must consist of one full day and ~~shall~~ must be the same as hours of operation on other authorized days of the month.

4.14.c.4. Eligible free day participants are limited to one pick-up truckload or its equivalent, per free day.

4.14.c.5. Only household appliances that have had the refrigerant (chlorofluorocarbons or hydrochlorofluorocarbons) removed ~~shall~~ may be disposed in the landfill.

4.14.c.6. Residential solid waste is not required to be bagged or bundled for acceptance by the landfill on free day. However, residential solid waste must be secured in a manner to prevent windblown material.

4.14.c.7. Within 60 days of the effective date of this rule, all commercial and public landfills ~~shall~~ must submit a free day policy to the ~~director~~Secretary for approval.

4.14.c.8. Solid waste landfill facilities are not required to accept waste tires without charge on free day but may choose to accept waste tires and charge the fees established in 33CSR5.

§33-1-5. Other Solid Waste Facility Performance Standards.

5.1. Requirements for Incinerators.

5.1.a. General Requirements.

5.1.a.1. The incinerator must be located, designed, and operated in accordance with subsection 5.1 of this rule.

5.1.a.2. Waste characterization must be performed in accordance with subsection 5.1 of this rule.

5.1.b. Location Criteria.

5.1.b.1. No person may establish, construct, operate, maintain or permit the use of property for any facility:

5.1.b.1.A. Within a 100-year floodplain;
or

5.1.b.1.B. Within an area where there is a reasonable probability that the facility will cause:

5.1.b.1.B.1. A significant adverse impact upon natural wetlands;

5.1.b.1.B.2. A significant adverse impact upon any endangered or threatened

species of animal or plant;

5.1.b.1.B.3. A significant adverse impact upon any surface water;

5.1.b.1.B.4. A significant adverse impact upon groundwater quality; or

5.1.b.1.B.5. 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.c. Operational Requirements.

5.1.c.1. No person may operate or maintain an incinerator except in conformance with the following minimum requirements, unless an exemption is granted by the ~~director~~Secretary in writing:

5.1.c.1.A. The facility must be situated, equipped, operated, and maintained as to minimize interference with other activities in the area;

5.1.c.1.B. Adequate shelter and sanitary facilities must be available for personnel;

5.1.c.1.C. A sign must be prominently posted at the entrance to the facility which indicates the name, permit number, the hours of operation, the hours waste may be received, necessary safety precautions, and any other pertinent information;

5.1.c.1.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.c.1.E. Solid waste must be stored in compliance with paragraph 3.16.b of this rule;

5.1.c.1.F. Dust must be controlled in the unloading and charging areas;

5.1.c.1.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.c.1.H. Appropriate firefighting equipment must be available in the storage and charging areas and elsewhere as needed;

5.1.c.1.I. Arrangements must be made with local fire protection agency to provide adequate emergency firefighting forces;

5.1.c.1.J. Means of communication with emergency facilities must be provided;

5.1.c.1.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.c.1.L. The charging openings as well as all equipment throughout the plant must be provided with adequate safety equipment;

5.1.c.1.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 rules;

5.1.c.1.N. Ash and residue must be disposed of at a solid waste facility permitted by the directorSecretary to accept the material or be handled by an alternative method approved in writing by the directorSecretary. Approval will be issued on a case-by-case basis after review of the information contained in reports filed pursuant to subsection 5.1 of this rule. Ash or residue from a facility with a design capacity of five hundred (500) pounds per hour must be placed in a monofill which must meet the design

requirements of 33CSR20.

5.1.c.1.O. All wastewater from the facility must be discharged into a sanitary sewer or other system approved in writing by the directorSecretary;

5.1.c.1.P. Upon the completion of construction of a new facility, and at least ten (10) days prior to initial operation, the directorSecretary must be notified to allow inspection of the facility both prior to and during any performance test(s) and initial operation;

5.1.c.1.Q. Open burning of solid waste at the facility is prohibited;

5.1.c.1.R. No hazardous waste may be accepted for disposal;

5.1.c.1.S. An alternative disposal method, approved by the directorSecretary in writing, must be used during any time that the facility is inoperative; and

5.1.c.1.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.d. Waste Characterization.

5.1.d.1. 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.d.1.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 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 ~~director~~Secretary; and

5.1.d.1.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 ~~director~~Secretary may specify an alternative testing program.

5.1.d.2. 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 paragraph 5.1.d.1 of this rule if the ~~director~~Secretary determines through an examination of information required in paragraph 5.1.c.1 of this rule that such testing is warranted.

5.2. Requirements for Transfer Stations.

5.2.a. General.

5.2.a.1. No person may conduct transfer station activities unless the ~~director~~Secretary has first issued a permit for the activities in accordance with the requirements of this rule.

5.2.a.2. No person conducting transfer station activities may allow ash, residue, or other waste specified in subsection 4.13 of this rule to be received or handled at a transfer station unless the ~~director~~Secretary has specifically approved handling that waste by the permit.

5.2.a.3. No person conducting transfer station activities may:

5.2.a.3.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.a.3.B. Allow explosive waste to be processed at the facility.

5.2.a.4. Regulated hazardous waste may not be disposed, processed, or stored where transfer station activities are conducted.

5.2.b. Location Criteria. -- Transfer stations must be sited in compliance with the location requirements of subsection 3.1, and subdivisions 3.2.c and 3.2.e of this rule and may not be sited within one hundred (100) feet of a perennial stream.

5.2.c. Signs. -- A person conducting transfer station activities must identify the operation by posting and maintaining a sign in accordance with subparagraph 4.6.a.1.M of this rule.

5.2.d. Access Control.

5.2.d.1. A gate or other barriers must be maintained at potential vehicular access points to block unauthorized access to the site when an attendant is not on duty.

5.2.d.2. The operator must construct and maintain a fence or other suitable barrier around the site sufficient to prevent unauthorized access.

5.2.d.3. Access to the site must be limited to times when an attendant is on duty.

5.2.e. Access Roads. -- Access roads must be designed, constructed, and maintained in accordance with subdivision 4.5.c of this rule.

5.2.f. Measuring Waste. -- Solid waste delivered to a transfer station must be accurately weighed or otherwise accurately measured prior to unloading in accordance with the provisions of 110CSR6A subsections 4.2 and 4.3.

5.2.g. Operations and Equipment.

5.2.g.1. Loading, unloading, storage, compaction and related activities must be conducted in an enclosed building, unless otherwise approved by the ~~director~~Secretary.

5.2.g.2. The permittee must maintain on the site equipment necessary for operation of the facility in accordance with the permit. The equipment must be maintained in an operable condition.

5.2.g.3. Standby equipment 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 must utilize standby equipment as necessary to comply with this rule.

5.2.g.4. Equipment must be operated and maintained so as to prevent solid waste from being unintentionally removed from the storage area.

5.2.g.5. Equipment used to handle putrescible solid waste must be cleaned at the end of each working day.

5.2.h. Unloading Area.

5.2.h.1. The approach and unloading area 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.h.2. The loading areas and unloading areas must be constructed of impervious material which is capable of being cleaned by high pressure water spray and must be equipped with drains or sumps connected to a sanitary sewer system or treatment facility to facilitate the removal of water.

5.2.h.3. If the facility has an unloading pit, the facility 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.h.4. An attendant or clearly marked signs must direct vehicles to the unloading area.

5.2.h.5. The permittee must ensure that collection vehicles unload waste promptly in unloading areas.

5.2.h.6. Solid waste must be confined to the unloading area and the approved storage areas.

5.2.i. Cleaning and Maintenance.

5.2.i.1. All areas within the building must be kept clean.

5.2.i.2. The operator must 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.i.3. Plumbing must be properly maintained, and the floors must be well drained.

5.2.i.4. Macerators, hammer mills, and grinders must be cleanable and must be equipped with drains that connect to a sanitary sewer system or treatment facility.

5.2.i.5. Provision must be made for the routine operational maintenance of the facility.

5.2.j. Water Quality Protection. - All permit holders must meet the requirements of W. Va. Code §22-11-1 et seq. and the rules promulgated thereunder.

5.2.k. Other Requirements.

5.2.k.1. The operator must also prevent and eliminate conditions not otherwise prohibited by 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.k.2. No person may cause or allow

open burning.

5.2.k.3. The operator must prevent the attraction, harborage or breeding of vectors.

5.2.k.4. Salvaging of materials must 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.k.5. Salvaged materials must be promptly removed from the unloading area and either stored in an approved area or transported off-site.

5.2.k.6. The operator must not allow litter to be blown or otherwise deposited off-site.

5.2.k.7. Fences or other barriers sufficient to control blowing litter 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.k.8. Litter must be collected at least weekly from fences, roadways, tree line barriers, and other barriers and disposed or stored in accordance with the Act, regulations and rules promulgated thereunder, unless a greater frequency is set forth in the permit.

5.2.k.9. A facility subject to this rule 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.k.10. The operator of a transfer station must meet all of the reporting requirements as specified in subsection 4.12 of this rule.

5.2.k.11. The facility must be surrounded with rapidly growing trees, shrubbery, fencing, berms, or other appropriate means to screen it from the surrounding area.

5.2.k.12. Only household waste and commercial waste must be accepted at the facility. No industrial waste, infectious waste, construction and demolition debris, or hazardous waste regulated under 33CSR20 must be accepted unless specifically approved by the ~~director~~Secretary.

5.2.k.13. 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.k.14. 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.k.15. 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.k.16. Adequate storage space for incoming solid waste must be available at the transfer station.

5.2.k.17. 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. (Performance Standards Reserved).

5.4. Requirements for the Operation of Construction/Demolition Class D-1 and Class D Solid Waste Facilities.

5.4.a. General Requirements. -- Only the construction/demolition wastes approved in the facility permit must be accepted. Prohibited materials include, but are not limited to: putrescible wastes, household wastes, automobile shredder fluff, industrial wastes, and sludge wastes, liquid paint including lead-

based paint or products coated with lead-based paint, lacquers, solvents, adhesives, cements, sealants, pesticides, aerosols, resin containers, brake fluid, lubricating oil and oil filters, any automotive fluids or fuels, railroad ties, pressure treated wood and engineered wood products, metal wastes (such as piping, wiring appliances, and "white goods"), electrical wastes (such as batteries, mercury-containing switches, ballasts, transformers and capacitors, fluorescent tubes, and computer equipment) carpet and other synthetic flooring material, or other items prohibited by the Class D General Permit Groundwater Protection Plan. are prohibited.

5.4.b. Class D-1 Facility Requirements. -- Class D-1 solid waste facilities must meet all of the requirements in section 4 of this rule unless an alternative standard from subdivision 5.4.b of this rule is met or the ~~director~~Secretary has granted, upon written request, an exemption from a specific requirement of section 4 of this rule.

5.4.b.1. A liner system for a Class D-1 solid waste facility must consist of the following elements:

5.4.b.1.A. Subbase;

5.4.b.1.B. Compacted soil liner; and

5.4.b.1.C. Leachate collection and protective cover zone.

5.4.b.2. The subbase portion of the liner system must consist of a cleared and grubbed natural ground surface capable of supporting the entire liner system.

5.4.b.3. The compacted soil liner must:

5.4.b.3.A. Be a minimum compacted thickness of two (2) feet;

5.4.b.3.B. Be compacted in six (6) inch lifts;

5.4.b.3.C. Be no more permeable than 1×10^{-6} cm/sec based on laboratory and field

testing;

5.4.b.3.D. Be free of particles greater than three (3) inches in any dimension;

5.4.b.3.E. Be placed without damaging the subgrade;

5.4.b.3.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.b.3.G. Have a slope of at least two percent (2%) to facilitate the drainage of leachate across the liner surface; and

5.4.b.3.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.b.3.I. The compacted soil construction liner certification and a Q.A./Q.C. report must be submitted to the ~~director~~Secretary prior to the placement of the leachate collection and protective cover zone.

5.4.b.4. The leachate collection and protective cover zone must:

5.4.b.4.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.b.4.B. Be at least eighteen (18) inches thick;

5.4.b.4.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.b.4.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.b.4.E. Be graded, uniformly compacted, and smoothed;

5.4.b.4.F. Be installed in a manner that prevents damage to the compacted soil liner; and

5.4.b.4.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 must also meet the following:

5.4.b.4.G.1. The slope sizing and spacing of the piping system must ensure that liquids drain efficiently from the leachate collection zone;

5.4.b.4.G.2. The distance between pipes in the piping system may not exceed one (100) hundred feet on center;

5.4.b.4.G.3. The pipes must be installed perpendicular to the flow;

5.4.b.4.G.4. The minimum diameter of the perforated pipe must be four (4) inches with a wall thickness of Schedule 40 or greater;

5.4.b.4.G.5. The pipe must be capable of supporting anticipated loads without failure based on facility design;

5.4.b.4.G.6. Rounded stones or aggregates must be placed around the pipes of the piping system. The stones or aggregates must be sized to prevent clogging of the pipes and damage to the composite liner;

5.4.b.4.G.7. The piping system must be installed in a fashion that facilitates cleanout,

maintenance, and monitoring. Manholes or cleanout risers must be located along the perimeter of the leachate detection piping system. The number and spacing of the manholes or cleanout risers must be sufficient to ensure proper maintenance of the piping system by water jet flushing or an equivalent method; and

5.4.b.4.G.8. The leachate collection system must be cleaned and maintained as necessary.

5.4.b.4.H. The leachate collection zone construction certification and a Q.A./Q.C. report must be submitted to the ~~director~~Secretary prior to the placement of solid waste.

5.4.c. Class D Facility Requirements. Except as herein specified, Class D solid waste facilities are exempt from the requirements of section 4 of this rule unless otherwise required by the ~~director~~Secretary, but must comply with the requirements of paragraphs 5.4.c.1 through 5.4.c.7 of this rule. A Class D facility ~~other than a Class D-1 solid waste facility shall~~ must not exceed two (2) acres in size.

5.4.c.1. Access must be controlled in such a manner as to discourage unauthorized entry and must be limited to those authorized to deposit waste material and only during scheduled hours.

5.4.c.2. Construction/demolition and cover material must not be placed into in or near a stream channel in any manner that violates paragraph 3.2.a.1. and must be placed in such a way to prevent erosion and sedimentation.

5.4.c.3. Cover material must be graded and maintained to prevent ponding and minimize erosion.

5.4.c.4. Erosion and sediment controls must be installed as necessary to prevent sedimentation.

5.4.c.5. The disturbed area must be revegetated to prevent erosion and sedimentation in accordance with subdivision 4.5.f of this rule.

5.4.c.6. Except when extended by the directorSecretary, all operations for a Class D solid waste facility 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.c.7. The permittee must notify the directorSecretary to arrange for a final inspection prior to removing equipment from the site. All site reclamation must be completed before equipment removal.

5.4.c.8. The directorSecretary may require a Class D solid waste facility to meet any specific requirement in section 4 of this rule.

5.5. Requirements for Class F Solid Waste Facilities. -- Except as provided in subsection 5.5 of this rule, all requirements of this rule ~~shall~~ will be applicable to Class F solid waste facilities.

5.5.a. Waivers and Modifications. -- During the permit issuance process or upon written request or appropriate notation on the application by the permittee, the directorSecretary may waive or modify the requirements of the subsections of section 3 of this rule that are listed in paragraph 5.5.a.1 of this rule and the requirements of the subsections of section 4 of this rule that are listed in paragraph 5.5.a.2 of this rule. Failure of the applicant to supply documentation requested by the directorSecretary, which is necessary to justify the requested waiver or modification, are grounds for waiver or modification denial. Each request for waiver or modification of a requirement of section 3 or 4 of this rule must be based upon sound engineering judgement taking into consideration the type of waste to be disposed, the type facility, and site characteristics.

5.5.a.1. The following requirements of

section 3 of this rule which may be waived or modified by the directorSecretary: subsection 3.4, paragraph 3.7.f.7, subdivisions 3.7.j, 3.7.k, and 3.7.m; part 3.8.c.1.C.4, subparagraph 3.8.d.4.A, paragraph 3.10.a.6, subdivision 3.10.c, subsections 3.13, and 3.14, and subdivision 3.16.d of this rule.

5.5.a.1.A. The requirements of paragraph 3.8.d.5, subparagraph 3.8.i.1.B, subsection 3.9, paragraph 3.10.a.1 and subdivision 3.11.c of this rule and the gas monitoring and control provisions of paragraphs 3.10.a.2, 3.10.a.4, and 3.10.b.3 of this rule may also be waived or modified by the directorSecretary for coal combustion by-product facilities.

5.5.a.2. The following requirements of section 4 of this rule which may be waived or modified by the directorSecretary for Class F facilities: subsection 4.4, part 4.5.b.3.A.3, subdivisions 4.5.c, 4.5.d, paragraphs 4.5.g.7, 4.5.g.8, 4.5.g.9, and 4.5.g.10, subparagraphs 4.6.b.1.B, 4.6.b.1.C, 4.6.b.2.A, 4.6.b.2.B, 4.6.b.2.D and 4.8.c.3.B, subsections 4.10 and 4.12, and paragraph 4.13.b.3 of this rule.

5.5.b. Requirements for Coal Combustion By-Product Facilities.

5.5.b.1. 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 May 1, 1990 must be as follows:

5.5.b.1.A. The liner system for landfills ~~shall~~ must consist 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~~ must 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 must be installed on top of the synthetic liner. The eighteen (18) inch leachate collection system layer shall must serve as the protective cover for the synthetic liner.

5.5.b.1.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 will also serve as a leachate detection system, shall must 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 must 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.b.1.C. Other alternative liner systems for landfills may be approved by the directorSecretary on a case-by-case basis. Such alternative liner system may be more or less stringent than the liner system described in subparagraph 5.5.b.1.A of this rule 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.b.1.D. Failure of an alternative liner design at the applicant's facility may result in the directorSecretary 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.b.1.E. The liner system for solid waste disposal surface impoundments shall must 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.b.1.F. Other alternative liner systems for solid waste disposal surface impoundments may be considered by the directorSecretary on a case-by-case basis. Such determination must 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.b.1.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 directorSecretary on a case-by-case basis. Taking into account site-specific conditions, an appropriate groundwater interceptor drainage system, which must also serve as a leachate detection system, must 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.b.1.H. The provisions of subparagraph 4.8.c.3.B of this rule do not apply to coal combustion by-product surface impoundments. Surface impoundments associated with a coal combustion by-product facility are not subject to any of the groundwater monitoring requirements of this rule if such impoundments are covered by the overall groundwater monitoring plan for the coal combustion by-product facility.

5.5.b.2. Operating Requirements. -- Operating requirements for coal combustion by-product landfills and solid waste disposal surface impoundments in operation on or closed prior to May 1, 1990 are as follows:

5.5.b.2.A. Operating landfills in existence on May 1, 1990 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 subsection 4.11 of this rule. Groundwater remediation may be determined on a case-by-case basis by the ~~director~~Secretary based upon an evaluation of the information from groundwater monitoring and assessment programs, as provided for in subsection 4.11 of this rule. Upon evidence of such contamination, a corrective action program may be required as described in subdivision 4.11.e of this rule. Such corrective action programs may include closure in accordance with section 6 of this rule, retrofit in accordance with paragraph 5.5.b.1 of this rule, or other appropriate remediation measures.

5.5.b.2.B. For coal combustion by-product landfills in existence on May 1, 1990 the liner provisions of subparagraphs 5.5.b.1.A, 5.5.b.1.B, and 5.5.b.1.C of this rule and the provisions of subsection 4.11 of this rule do not apply to closed or closed portions of such landfills. Monitoring ~~shall~~ will not be required for such facilities that are closed prior to May 1, 1990 except for currently-permitted closed facilities or in connection with any remedial or corrective action program ordered by the ~~director~~Secretary.

5.5.b.2.C. The requirements of this rule are not applicable to coal combustion by-product disposal surface impoundments in existence on or before May 1, 1990 and which are operating under a permit issued under W. Va. Code §22-11-1 et seq., except that all such impoundments ~~shall~~ will 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~~Secretary based upon an evaluation of the information from groundwater monitoring and assessment programs. Evidence of groundwater contamination, as determined by subsection 4.11 of this rule, may require a corrective action program as described in subdivision 4.11.e of this rule.

5.5.b.3. Leachate Analysis. -- The requirements of subdivision 4.8.d of this rule apply to coal combustion by-product landfills and surface impoundments with the exception that the requirements in paragraph 4.8.d.2 of this rule ~~shall~~ will be replaced by the following:

5.5.b.3.A. On a semiannual basis, the chemical composition of the leachate flowing into a leachate treatment system from a coal combustion by-product facility must, unless waived by the ~~director~~Secretary, 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~~Secretary in writing.

5.5.b.3.A.1. The monitoring parameters listed in subparagraph 5.5.b.3.A of this rule must be reported as total metals, unless otherwise specified by the ~~director~~Secretary.

5.5.b.4. 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 so long as such uses are consistent with the requirements of paragraph 5.5.b.4 of this rule:

5.5.b.4.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.b.4.B. Coal combustion by-products used for the extraction or recovery of materials and compounds contained within the coal combustion by-products;

5.5.b.4.C. Coal combustion by-products used as a stabilization/solidification agent for other wastes. This use of coal combustion by-products ~~shall~~ will be considered a beneficial use for the purposes of paragraph 5.5.b.4 of this rule 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.b.4.C.1. The person or entity proposing the use has first given advance written notice to the ~~director~~Secretary; and

5.5.b.4.C.2. 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.b.4.D. Coal combustion by-products used under the authority of W. Va. Code §§22-2-1 et seq. and 22-3-1 et seq.;

5.5.b.4.E. Coal combustion by-products used as pipe bedding or as a composite liner drainage layer;

5.5.b.4.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.b.4.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.b.4.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 of Highways or the project owner.

Note: Paragraph 5.5.b.4 of this rule 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.c. Requirements for Industrial Solid Waste Facilities Other Than Coal Combustion By-Product Facilities.

5.5.c.1. Liner System Requirements. -- Liner system requirements for industrial solid waste landfills and solid waste disposal surface impoundments are as follows:

5.5.c.1.A. Except as otherwise provided in subdivision 5.5.c of this rule, all provisions of section 4 of this rule are applicable to industrial solid waste landfills and industrial solid waste disposal surface impoundments constructed after May 1, 1990.

5.5.c.1.A.1. Any provision of section 4 of this rule may be waived or modified by the ~~director~~Secretary upon written request of the permittee if such provision, in the discretion of the ~~director~~Secretary, 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~~Secretary ~~shall~~ will be based upon good engineering judgement.

5.5.c.1.A.2. For industrial solid waste landfills in existence on May 1, 1990, the liner provisions in sections 4 and subsection 5.5 of this rule do not apply to closed or closed portions of such landfills. However, the liner provisions 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 by an agreed date by which all waste must thereafter be placed on an approved liner system, which date ~~shall~~ will be no later than thirty (30) months following May 1, 1990.

5.5.c.1.B. Solid waste disposal surface impoundments in operation on May 1, 1990 may continue operation throughout the design life of the impoundment, provided the impoundment must not be expanded to a size greater than the design approved by the ~~director~~Secretary in the permit last issued for the facility. Groundwater remediation may be determined on a case-by-case basis by the ~~director~~Secretary based upon an evaluation of the information developed under the assessment provisions of subdivision 4.11.e of this rule.

5.5.c.2. Appropriate monitoring provisions of subsection 4.11 of this rule ~~shall~~ will be incorporated into the permits for industrial solid waste landfills and industrial solid waste disposal surface impoundments in operation on May 1, 1990. No monitoring ~~shall~~ will be required for such facilities closed prior to May 1, 1990 except for closed facilities under a permit as of May 1, 1990 or in connection with any remedial or corrective action program ordered by the ~~director~~Secretary.

5.6. Requirements for Uncommon or

Miscellaneous Facilities.

5.6.a. Green Boxes, Bins, Roll-Offs and Dumpsters.

5.6.a.1. Each person who causes to be placed a green box, bin, roll-off or dumpster at places other than approved solid waste facilities are responsible for maintenance, prevention of litter, open dump control, and leachate management at the site of the dumpster.

5.6.b. Composting. (Reserved)

Note: Composting requirements are regulated under 33CSR2 "Sewage Sludge Management Rule," and Title 33CSR3 "Yard Waste Composting Rule."

§33-1-6. Closure and Post-Closure Care.

6.1. Permanent Closure Criteria.

6.1.a. 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 ~~director~~Secretary determines that closure is required, cease to accept waste and perform closure activities at the facility or portion thereof in accordance with the plan approval issued by the ~~director~~Secretary and the provisions of subsection 6.1 of this rule unless otherwise approved by the ~~director~~Secretary in writing.

6.1.a.1. Upon request of the permittee, or upon the ~~director~~Secretary's own initiative, the ~~director~~Secretary may waive or modify any of the closure requirements of section 6 of 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.a.2. Closure of existing solid waste landfills:~~

~~6.1.a.2.A. Existing SWLFs that cannot make the demonstration specified in subdivision 3.2.g pertaining to airports, subdivision 3.2.d pertaining to floodplains, or subdivision 3.2.j pertaining to unstable areas, must close by October 9, 1996, in accordance with subsection 6.1 of this rule and conduct post-closure activities in accordance with subsection 6.3 of this rule.~~

~~6.1.a.2.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.a.2.B.1. There is no available alternative disposal capacity;~~

~~6.1.a.2.B.2. There is no immediate threat to human health and the environment.~~

6.1.b. Notification Procedures.

6.1.b.1. At least one hundred and twenty (120) days prior to closing the facility, the permittee must notify the directorSecretary in writing of the intent to close the facility and the expected date of closure. Prior to this date, the permittee must notify all users of the facility of the intent to close the facility so that alternative disposal options may be evaluated.

6.1.b.2. Signs 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.b.3. Notice of the upcoming closure 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 directorSecretary within ten (10) days of the date of publication.

6.1.c. Restricted Access. -- Within ten (10) days after ceasing to accept waste, the permittee 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 directorSecretary.

6.1.d. Deed Notation.

6.1.d.1. Following closure of all portions of the SWLF, the owner or operator must record a deed notation to the SWLF facility property with the county clerk's office that must be available with the deed of the property that will in perpetuity notify any potential purchaser of the following: (The permittee must also retain a copy of the deed notation in the facility operating record.)

6.1.d.1.A. The land has been used as a landfill facility;

6.1.d.1.B. Its use is restricted under paragraph 6.3.f.3 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.d.1.C. The permittee may request permission from the directorSecretary to remove the notation from the deed if all wastes are removed from the facility.

6.1.d.2. The deed must include at a minimum:

6.1.d.2.A. A survey plot indicating the location and dimension of the landfill;

6.1.d.2.B. A record of waste, including type, location, and quantity of waste disposed of at the site; and

6.1.d.2.C. Disposal location of asbestos and any other waste specified by the directorSecretary.

6.1.d.3. A certification of deed notation

must be filed with the ~~director~~Secretary within ninety (90) days of closure.

6.1.e. Closure and Post-Closure Care.

6.1.e.1. Unless otherwise approved by the ~~director~~Secretary in writing, the closure plan must include the installation of a final cover system that is designed to minimize infiltration and erosion, as follows:

6.1.e.1.A. The permittee must provide a final cover system comprised of an erosion layer underlain by an infiltration layer and grading in the following manner:

6.1.e.1.A.1. 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 must be placed directly on the intermediate cover to facilitate landfill gas control;

6.1.e.1.A.2. 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 must be placed and graded over the entire surface of each final lift in six (6) inch lifts. The ~~director~~Secretary may, in the issued permit, approve the use of a synthetic material in lieu of the layer of clay;

6.1.e.1.A.2.1. An alternative clay cap layer may be approved by the ~~director~~Secretary 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.e.1.A.3. 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, capable of transmitting flow and preventing erosion must be placed over the cap.

6.1.e.1.A.4. Vegetative Cover Layer. -- A uniform and compacted layer of soil that is at least two (2) feet in thickness and capable of supporting vegetation 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.e.1.B. The permittee must install an appropriate gas management system, active or passive, or as required by W. Va. Code, and all rules promulgated thereunder, to collect and control methane and other explosive gases. At a minimum, the permittee must install passive gas vents numbering a minimum of one (1) per acre.

6.1.e.1.C. Placement of Final Cover. -- The operator must ~~place final cover~~ install a final cover system as described in subdivision 6.1.e. within six (6) months after disposal in the final lift ceases or as soon thereafter as weather permits, unless the permittee obtains written approval from the ~~director~~Secretary 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 ~~director~~Secretary will not allow a later period unless, at a minimum, delayed installation will not cause or allow any violations of any provision of 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.e.1.C.~~ 6.1.e.1.D. 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 ~~director~~Secretary.

~~6.1.e.1.D.~~ 6.1.e.1.E. The grade of the final surface of the facility must not be less than three percent (3%) nor more than twenty-five percent (25%) unless otherwise approved by the ~~director~~Secretary as a part of the issued permit. Long slopes 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.e.1.E.~~ 6.1.e.1.F. Within ninety (90) days after the placement of the final cover system, the permittee must complete seeding, fertilizing, and mulching of the finished surface. The seed type and amount of fertilizer applied 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 ~~director~~Secretary in writing, seed mixture and application rates must be in accordance with subdivision 4.5.f of this rule.

~~6.1.e.1.F.~~ 6.1.e.1.G. Additional information may be required at the discretion of the ~~director~~Secretary.

~~6.1.e.1.G.~~ 6.1.e.1.H. A closure plan for solid waste facilities other than landfills must include the requirements of subparagraphs 6.1.e.1.D and 6.1.e.1.E of this rule and any other requirement specified by the ~~director~~Secretary.

6.1.e.2. Alternative Final Cover Design -- The ~~director~~Secretary may approve an alternative final cover design that includes:

6.1.e.2.A. An infiltration layer that achieves an equivalent reduction in infiltration as

the infiltration layer specified in subpart 6.1.e.1.A and

6.1.e.2.B. An erosion layer that provides equivalent protection from wind and water erosion as the erosion layer specified in part 6.1.e.1.A.4.

6.1.e.3. 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 paragraph 6.1.e.1 or 6.1.e.2, as applicable.

6.1.e.3.A. The closure plan, at a minimum, must include the following information:

6.1.e.3.A.1. A description of the final cover, designed in accordance with paragraph 6.1.e.1 and the methods and procedures to be used to install the cover;

6.1.e.3.A.2. An estimate of the largest area of the SWLF ever requiring a final cover as required under paragraph 6.1.e.1 at any time during the active life;

6.1.e.3.A.3. An estimate of the maximum inventory of wastes ever on-site over the active life of the landfill facility; and

6.1.e.3.A.4. A schedule for completing all activities necessary to satisfy the closure criteria in section 6 of this rule.

6.1.e.4. The permittee must notify the ~~director~~Secretary that a closure plan has been prepared and placed in the operating record no later than June 2, 1996 or by the initial receipt of waste, whichever is later.

6.1.e.5. Prior to beginning closure of each portion of the SWLF as specified in paragraph 6.1.e.6 a permittee must notify the ~~director~~Secretary that a notice of the intent to close the portion of the SWLF has been placed in the operations record.

6.1.e.6. 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.e.6.A. Extensions beyond the one-year deadline for beginning closure may be granted by the directorSecretary 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.e.7. 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 paragraph 6.1.e.6 of this rule, unless otherwise approved by the Secretary in writing.

6.1.e.7.A. Extensions of the closure period may be granted by the directorSecretary 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.f. Final Use at Landfills. -- The following activities are prohibited at closed landfills unless specifically approved by the directorSecretary in writing:

6.1.f.1. Use of the facility for agricultural purposes;

6.1.f.2. Establishment or construction of any buildings; or

6.1.f.3. Excavation of the final cover or any waste materials.

6.1.g. Certification by Registered Professional Engineer.

6.1.g.1. 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 directorSecretary for closure approval. The permittee must also notify the directorSecretary, in writing of this certification, signed by an independent registered professional engineer and approved by the directorSecretary, 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.h. Closure Approval. -- Upon completion of requirements related to closure, the directorSecretary will issue a final closure approval. The date of the directorSecretary's final closure approval must be the date of commencement of the post-closure bond liability period.

6.2. Inactive Status. -- Upon application to the directorSecretary, a permittee may request inactive status for a period not to exceed six (6) months. To qualify for inactive status, the permittee must:

6.2.a. Intermediate Cover. -- Demonstrate that all solid wastes are covered by at least one (1) foot of intermediate cover.

6.2.b. Final Cover. -- Demonstrate that all areas where solid waste disposal is complete have been covered with final cover as described in subparagraph 4.6.b.2.C of this rule.

6.2.c. Revegetation. -- Demonstrate that all disturbed areas have been seeded in accordance with the revegetation plans specified by subdivision 4.5.f of this rule.

6.2.d. Restricted Access. -- Restrict access to the area.

6.2.e. Maintenance of Leachate Control. -- Demonstrate that leachate collection and treatment will be maintained.

6.2.f. 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.g. Other Assurances. -- Provide any other assurance specified by the ~~director~~Secretary.

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 must continue for up to thirty (30) years after final closure of areas unless otherwise modified by the ~~director~~Secretary and must consist of the following:

6.3.a. Monitoring. -- Monitoring must continue as specified in the monitoring plan required by the permit.

6.3.b. Repair of Settlement. -- Any settling of solid waste which occurs up to ~~ten (10)~~ thirty (30) years of the date of final closure, causing ponding of waters in areas of solid waste deposits, must be repaired promptly. Such repairs 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.c. Repair of Cover Material. -- Any cracking or erosion of cover material which occurs and may cause waters to enter solid waste deposits must be repaired immediately. Such repairs must include any necessary regrading, additions of cover material, and revegetation to eliminate such cracks or eroded areas.

6.3.d. Site Monitoring. -- Further disposal of solid waste at a closed solid waste facility is prohibited. The closed solid waste facility 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 must be promptly removed and disposed of at an approved solid waste facility. Evidence of disease vectors must be treated promptly.

6.3.d.1. Maintaining and operating the leachate collection system in accordance with the requirements in paragraph 4.5.d.1.

6.3.d.1.A. The ~~director~~Secretary 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.d.2. Monitoring the groundwater in accordance with the requirements of subsection 4.11 and maintaining the groundwater monitoring system, if applicable; and

6.3.d.3. Maintaining and operating the gas monitoring system in accordance with the requirements of subsection 4.10 of this rule.

6.3.e. Length of the Post-Closure Care Period -- The length of the post-closure care period may be:

6.3.e.1. Decreased by the ~~director~~Secretary 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~~Secretary; or

6.3.e.2. Increased by the ~~director~~Secretary, if the ~~director~~Secretary determines that the lengthened period is necessary to protect human health and the environment.

6.3.f. 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.f.1. A description of the monitoring and maintenance activities required in subsection 6.3 for each SWLF, and the frequency at which these activities will be performed;

6.3.f.2. Name, address, and telephone number of the person or office to contact about the facility during the post-closure period; and

6.3.f.3. A description of the planned uses of the property during the post-closure period.

6.3.f.3.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.f.3.B. The directorSecretary 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.g. The permittee must notify the directorSecretary that a post-closure plan has been prepared and placed in the operating record no later than June 2, 1996 or by the initial receipt of waste, whichever is later.

6.3.g.1. Following completion of the post-closure care period for each portion of the SWLF, the permittee must notify the directorSecretary that a certification, signed by an independent registered professional engineer and approved by the directorSecretary, 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.a. 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 directorSecretary.

6.4.b. Upon a request for a final post-closure inspection, the directorSecretary will inspect the facility to verify that final post-closure has been completed as follows:

6.4.b.1. 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 Division Department of Environmental Protection, all terms and conditions of the facility permit(s), including the approved closure plan, and all orders issued by the directorSecretary have been complied with.

6.4.b.2. 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 Department, orders issued by the directorSecretary, and the terms and conditions of the permit and the approved closure plan.

6.4.b.3. The facility is not causing, and will not cause, any adverse effects on the environment, and is not causing a nuisance.

6.4.c. Upon a finding by the directorSecretary that the facility is in compliance with all factors listed in subsection 6.4 of this rule, the permittee will be eligible for bond release pursuant to subsection 6.6 of this rule.

6.4.d. Upon a finding by the directorSecretary that the facility is not in compliance with all the factors listed in subsection 6.4 of this rule, the directorSecretary will initiate proceedings for bond forfeiture pursuant to subsection 6.5 of this rule.

6.5. Bond Forfeiture.

6.5.a. Procedure. -- If the directorSecretary declares a bond or any other form of financial assurance provided by the permittee forfeited, the directorSecretary will:

6.5.a.1. 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 directorSecretary's determination to declare the bond forfeit and the reasons for the forfeiture;

6.5.a.2. Advise the principal and surety of the right to appeal to circuit court; and

6.5.a.3. Proceed to collect on the bond as provided by applicable laws for the collection of defaulted bonds or other debts.

6.5.b. Collateral Bonds and other Forms of Financial Assurance. -- If the directorSecretary declares a collateral bond forfeited, the directorSecretary 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 directorSecretary will take appropriate steps to collect the proceeds.

6.5.c. Surety Bond. -- If the directorSecretary declares a surety bond forfeited, he or she will 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.d. 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 must be deposited in the Solid Waste Enforcement Fund that was established pursuant to W. Va. Code §22-15-11(h)(1).

6.6. Release of Bonds.

6.6.a. Request. -- An operator seeking a release of a bond previously submitted to the directorSecretary must file a written request with the directorSecretary for release of the bond amount after inspection or after posting a replacement bond in accordance with the provisions of subsection 3.13 of this rule.

6.6.b. Application. -- The application for bond release must contain the following:

6.6.b.1. The name of the permittee and identification of the facility for which bond release is sought;

6.6.b.2. The total amount of the bond in effect for the facility; and

6.6.b.3. Other information that may be required by the directorSecretary.

6.6.b.4. The release or forfeiture of a bond by the directorSecretary 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.b.5. The directorSecretary 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 ~~director~~Secretary, or the terms and conditions of permits are expressly preserved. Nothing in this rule is an exclusive penalty or remedy for such a violation. No action taken under this rule waives or impairs another remedy or penalty provided in law or equity.

§33-1-7. Open Dumps.

7.1. Prohibitions.

7.1.a. No person may create or operate an open dump.

7.1.b. No person may contribute additional solid waste to an open dump at any time.

7.1.c. Except as provided in subdivisions 7.1.d and 7.1.e of this rule, 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~~Secretary.

7.1.d. 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 subdivision 7.1.c of this rule if such open dump did not constitute a violation of law on January 1, 1988.

7.1.d.1. 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.d.2. 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.e. An unauthorized dump created by unknown persons is not deemed to constitute a violation of subdivision 7.1.c of this rule 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.e.1. The posting of signs stating that dumping is illegal;

7.1.e.2. The erection of fencing to surround the accumulated waste;

7.1.e.3. Surveillance of the open dumping areas to determine the identity of contributors to such open dumps;

7.1.e.4. The removal and keeping of certain indications of ownership as contemplated by W. Va. Code §20-7-26(b); or

7.1.e.5. Testimony before a judicial officer regarding the identity of contributors to the dump.

7.1.f. Open burning of solid waste is prohibited.

7.2. Protection of the Environment and the Public.

7.2.a. Any site at which the following protective measures have not been instituted ~~shall~~ will be classified as an open dump:

7.2.a.1. 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.a.2. 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~~Secretary);

7.2.a.3. Measures must be taken to prevent the introduction of hazardous or infectious materials to the accumulated waste;

7.2.a.4. 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.a.5. 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.a.6. 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.a.7. Any other similar measures specified by the ~~director~~Secretary in Division Department policy, regulation, or rule.

7.3. Schedules of Compliance for Open Dumps.

7.3.a. Schedules of compliance for open dumps will contain a sequence of enforceable actions.

7.3.b. 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.a. If the ~~director~~Secretary 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.b. The ~~Division~~ Department may conduct any test deemed necessary by the ~~director~~Secretary 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.c. The ~~director~~Secretary may perform, or require a person by order to perform, any and all acts necessary to carry out the provisions of the Act, regulations, or rule with regard to an open dump.

7.4.c.1. Any person having an interest which is or may be affected or who is aggrieved by any order of the ~~director~~Secretary with regard to an open dump may appeal such order to the Environmental Quality Board pursuant to the provisions of W. Va. Code §22B-3-1 et seq.

7.5. Cooperation with the State Division of Highways.

7.5.a. 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 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.b. Waste-In-Transit Inspections. -- The ~~director~~Secretary may designate authorized representatives to coordinate with authorized representatives of the commissioner of the West Virginia Division of Highways and the West Virginia Public Service Commission 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 of Highways.

7.6. Cooperation with the State Tax and Revenue Division.

7.6.a. The ~~Division~~ Department will cooperate with the State Tax Commissioner in the handling of proceeds received by the State Tax and Revenue Division from fees collected pursuant to the Act.

7.7. Cooperation with the State Health Division.

7.7.a. The ~~Division~~ Department will cooperate with the West Virginia Division 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.a. 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 I
CONSTITUENTS FOR PHASE I DETECTION MONITORING¹

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)
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 Conductance	(μ mhos/cm)
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, (BOD-5day), fluoride and calcium.

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-Dichloroethane; Ethylene dichloride	107-06-2
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4
cis-1,2-Dichloroethylene; 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; Perchloroethylene	127-18-4
Toluene	108-88-3
1,1,1-Trichloroethane; Methylchloroform	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 8011; 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 groundwater that contain this element are included.

APPENDIX II
 PHASE II ASSESSMENT MONITORING
 HAZARDOUS INORGANIC AND ORGANIC CONSTITUENTS¹

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 8270	200 10
Acenaphthylene	208-96-8	Acenaphthylene	8100 8270	200 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 8260	5 100
Acrylonitrile	107-13-1	2-Propenenitrile	8030 8260	5 200
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,4aB,5a,8a,8aB)-	8080 8270	0.05 10
Allyl chloride	107-05-1	1-Propene, 3-chloro-	8010 8260	5 10
4-Aminobiphenyl	92-67-1	{1,1'-Biphenyl}-4-amine	8270	20
Anthracene	120-12-7	Anthracene	8100 8270	200 10
Antimony	(Total)	Antimony	6010 7040 7041	300 2000 30
Arsenic	(Total)	Arsenic	6010 7060 7061	500 10 20

33CSRI

Barium	(Total)	Barium	6010	20
			7080	1000
Benzene	71-43-2	Benzene	8020	2
			8021	0.1
			8260	5
Benzo(a)anthracene;Benzanthracene	56-55-3	Benzo(a)anthracene	8100	200
			8270	10
Benzo(b)fluoranthene	205-99-2	Benzo(e)acephenanthrylene	8100	200
			8270	10
Benzo(k)fluoranthene	207-08-9	Benzo(k)fluoranthene	8100	200
			8270	10
Benzo(ghi)perylene	191-24-2	Benzo(ghi)perylene	8100	200
			8270	10
Benzo(a)pyrene	50-32-8	Benzo(a)pyrene	8100	200
			8270	10
Benzyl alcohol	100-51-6	Benzenemethanol	8270	20
Beryllium	(Total)	Beryllium	6010	3
			7090	50
			7091	2
alpha-BHC	319-84-6	Cyclohexane, 1,2,3,4,5,6-	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'-[methylenebis	8110	5
		(oxy)]bis[2-chloro	8270	10
Bis(2-chloroethyl)ether;	111-44-4	Ethane, 1,1'-oxybis[2-chloro-	8110	3
Dichloro-ethyl ether			8270	10
Bis(2-chloro 1-methyl)ethyl	108-60-1	Propane, 2,2-oxybis[1-chloro-	8110	10
ether; 2,2'-Dichlorodiiso-			8270	10
propyl ether; DCIP See Note 7				

Bis(2-ethylhexyl)phthalate	117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester	8060	20
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	25
			8270	10
Butyl benzyl phthalate; Benzyl butyl phthalate	85-68-7	1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester	8060	5
			8270	10
Cadmium (Total)		Cadmium	6010	40
			7130	50
			7131	1
Carbon disulfide	75-15-0	Carbon disulfide	8260	100
Carbon tetrachloride	56-23-5	Methane, tetrachloro-	8010	1
			8021	0.1
			8260	10
Chlordane	See Note 8	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	8080	0.1
			8270	50
p-Chloroaniline	106-47-8	Benzenamine, 4-chloro	8270	20
Chlorobenzene	108-90-7	Benzene, chloro-	8010	2
			8020	2
			8021	0.1
			8260	5
Chlorobenzilate	510-15-6	Benzenoacetic acid, 4-chloro-a-(4-chlorophenyl)-a-hydroxyethyl ester	8270	10
p-Chloro-m-cresol;	59-50-7	Phenol, 4-chloro-3-methyl-	8040	5
4-Chloro-3-methylphenol			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
			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'-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- ethylidene)bis{4-chloro-	8080	0.05
			8270	10

33CSR1

4,4 ¹ -DDT	50-29-3	Benzene 1,1 ¹ -(2,2,2-trichloro-ethylidene)bis {4-chloro-}	8080	0.1
			8270	10
Diallate	2303-16-4	Carbamoithioic 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;	124-48-1	Methane, dibromochloro-	8010	1
Chlorodibromomethane			8021	0.3
			8260	5
1,2-Dibromo-3-chloropropane;DBCP	96-12-8	Propane, 1,2-dibromo-3-chloro-	8011	0.1
			8021	30
			8260	25
1,2-Dibromoethane;	106-93-4	Ethane, 1,2-dibromo	8011	0.1
Ethylene dibromide;EDB			8021	10
			8260	5
Di-n-butyl phthalate	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester	8060	5
			8270	10
o-Dichlorobenzene;	95-50-1	Benzene, 1,2-dichloro-	8010	2
1,2-Dichlorobenzene			8020	5
			8021	0.5
			8120	10
			8260	5
			8270	10
m-Dichlorobenzene;	541-73-1	Benzene, 1,3-Dichloro-	8010	5
1,3-Dichlorobenzene			8020	5
			8021	0.2
			8120	10
			8260	5
			8270	10

p-Dichlorobenzene;	106-46-7	..... Benzene, 1,4-Dichloro-	8010	.....	2
1,4-Dichlorobenzene			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,	8270	.....	20
		3,3 ¹ --dichloro-			
trans-1,4-Dichloro-2-	110-57-6	..... 2-Butene, 1,4-dichlor-(E)	8260	.....	100
butene					
Dichlorodifluoro-	75-71-8	..... Methane, dichlorodifluoro	8021	.....	0.5
methane; CFC 12			8260	.....	5
1,1-Dichloroethane;	75-34-3	..... Ethane, 1,1-dichloro	8010	.....	1
Ethylidene chloride			8021	.....	0.5
			8260	.....	5
1,2-Dichloroethane;	107-06-2	..... Ethane, 1,1-dichloro	8010	.....	0.5
Ethylene dichloride			8021	.....	0.3
			8260	.....	5
1,1-Dichloroethylene;	75-35-4	..... Ethene, 1,1-dichloro	8010	.....	1
1,1-Dichloroethene;			8021	.....	0.5
Vinylidene chloride			8260	.....	5
cis-1,2-Dichloroethylene;	156-59-2	..... Ethene, 1,2-dichloro-(Z)	8021	.....	0.2
cis-1,2-Dichloroethane			8260	.....	5
trans-1,2-Dichloro-	156-60-5	..... Ethene, 1,2-dichloro-(E)	8010	.....	1
ethylene; trans-1,2-			8021	.....	0.5
Dichloroethene			8260	.....	5
2,4-Dichlorophenol	120-83-2	..... Phenol, 2,4-dichloro-	8040	.....	5
			8270	.....	10
2,6-Dichlorophenol	87-65-0	..... Phenol, 2,6-dichloro-	8270	.....	10
1,2-Dichloropropane;	78-87-5	..... Propane, 1,2-dichloro-	8010	.....	0.5
Propylene dichloride			8021	.....	0.05
			8260	.....	5
1,3-Dichloropropane;	142-28-9	..... Propane, 1,3-dichloro-	8021	.....	0.3
Trimethylene dichloride			8260	.....	5

2,2-Dichloropropane;	594-20-7	Propane, 2,2-dichloro-	8021	0.5
Isopropylidene chloride			8260	15
1,1-Dichloropropene	563-58-6	1-Propene, 1,1-dichloro-	8021	0.2
			8260	5
cis-1,3-Dichloropropene	10061-01-5	1-Propene, 1,3-dichloro-(Z)	8010	20
			8260	10
trans-1,3-Dichloro-	10061-02-6	1-Propene, 1,3-dichloro-(E)	8010	5
propene			8260	10
Dieldrin	60-57-1	2,7:3,6-Dimethanonaphth {2,3-b}oxirene, 3,4,5,6,9,9 -hexa, chloro-1a,2,2a,3,6,6a,7, 7a-octa- hydro-,(1aa,2B,2aa,3B, 6B,6aa,7B,7aa)	8080	0.05
			8270	10
Diethyl phthalate	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester	8060	5
			8270	10
0,0-Diethyl 0-2-	297-97-2	Phosphorothioic acid, 0,0-diethyl 0-pyrazinyl ester	8141	5
pyrazinyl			8270	20
phosphorothioate; Thionazin			8141	3
Dimethoate	60-51-5	Phosphorothioic acid,	8270	20
		0,0-diethyl,S-{2-(methylamino) -2-oxoethyl} ester		
p-(Dimethylamino)azobenzene	60-11-7	Benzenamine,N,N-dimethyl- 4-(phenylazo)	8270	10
7,12-Dimethylbenz{a}anthracene-	57-97-6	Benz{a}anthracene, 7,12-dimethyl-	8270	10
3,3-Dimethylbenzidine-	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, dimethyl ester	8060	5
			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-Dinitrotoluene	121-14-2	Benzene, 1-methyl-2,4-dinitro-	8090	0.2
			8270	10
2,6-Dinitrotoluene	606-20-2	Benzene, 2-methyl-1,3-dinitro-	8090	0.1
			8270	10
Dinoseb; DNBP; 2-sec- Butyl-4,6-dinitrophenol	88-85-7	Phenol, 2-(1-methylpropyl)- 4,6-dinitro-	8150	1
Di-n-octyl phthalate	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester	8270	20
Diphenylamine	122-39-4	Benzenamine, N-phenyl-	8060	30
Disulfoton	298-04-4	Phosphorodithioic acid,0,0-diethyl S-{2-(ethylthio)ethyl}.ester	8270	10
			8140	2
			8141	0.5
Endosulfan I	959-98-8	6,9-Methano-2,4,3-benzodiox- athiepin, 6,7,8,9,10,10-hexa- chloro 1,5,5a,6,9,9a-hexahydro, 3-oxide	8270	10
			8080	0.1
Endosulfan II	33213-65-9	6,9-Methano-2,4,3-benzodiox- athiepin, 6,7,8,9,10,10-hexa- chloro 1,5,5a,6,9,9a-hexa-hydro, 3-oxide, (3a,5aa,6B,9B,9aa)-	8080	0.05
			8270	20
Endosulfan sulfate	1031-07-8	6,9-Methano-2,4,3-benzodiox- athiepin, 6,7,8,9,10,10-hex- achloro 1,5,5a,6,9,9a-hexa- hydro, 3,3-dioxide.	8080	0.5
			8270	10
Endrin	72-20-8	2,7:3,6-Dimethanonaphth{2,3-b} oxirene,3,4,5,6,9,9-hexachloro- 1a,2,2a,3,6,6a,7,7a- octahydro-, (1aa,2B,2aB,3a,6a,6aB,7B,7aa)-	8080	0.1
			8270	20

Endrin aldehyde	7421-93-4	1,2,4-Methenocyclopenta {cd} pentalene-5- carboxaldehyde, 2,2a,3,3,4,7-hexachlorodec ahydro-, (1a,2B,2aB,4B,4aB,5B,6aB,6bB,7R)	8080 8270	0.2 10
Ethylbenzene	100-41-4	Benzene, ethyl-	8020 8221 8260	2 0.05 5
Ethyl methacrylate	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester	8015 8260 8270	5 10 10
Ethyl methanesulfonate	62-50-0	Methanesulfonic acid, ethylester	8270	20
Famphur	52-85-7	Phosphorothioic acid, 0-[4-((dimethylamino)sulfonyl)phenyl] 0,0-dimethyl ester	8270	20
Fluoranthene	206-44-0	Fluoranthene	8100 8270	200 10
Fluorene	86-73-7	9-H-Fluorene	8100 8270	200 10
Heptachlor	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7, 8,8-heptachloro-3a,4,7, 7a-tetrahydro-	8080 8270	0.05 10
Heptachlor epoxide	1024-57-3	2,5-Methano-2H-indeno {1,2-b} oxirene,2,3,4,5,6,7,7-hepta chloro-1a,1b,5,5a,6,2,2, hexahydro-(1aa,1bB,2a,5a, 5aB,6B,6aa)	8080 8270	1 10
Hexachlorobenzene	118-74-1	Benzene, hexachloro	8120 8270	0.5 10
Hexachlorobutadiene	87-68-3	1,3-Butadiene, 1,1,2,3,4, 4-hexachloro-	8021 8120 8260 8270	0.5 5 10 10
Hexachlorocyclopentadiene	77-47-4	1,3-Cyclopentadiene, 1,2,3, 4,5, 5-hexachloro-	8120 8270	5 10

Hexachloroethane	67-72-1	Ethane, hexachloro-	8120	0.5
			8260	10
			8270	10
Hexachloropropene	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-	8270	10
2-Hexanone; Methyl butyl ketone	591-78-6	2-Hexanone	8260	50
Indeno(1,2,3-cd)pyrene	193-39-5	Indeno(1,2,3-cd)pyrene	8100	200
			8270	10
			8015	50
			8240	100
Isobutyl alcohol	78-83-1	1-Propanol, 2-methyl-	8270	20
			8260	10
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)-	8090	60
		2-Cyclohexen-1-one,3,5,5 trimethyl	8270	10
Isophorone	78-59-1		8270	10
			8270	20
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-pridinyln-1/2-thienylmethyl)	8270	100
Methoxychlor	72-43 5	Benzene, 1,1-(2,2,2,trichloro-ethylidene) bis(4-methoxy-	8080	2
			8270	10
Methyl bromide;	74-83-9	Methane, bromo-	8010	20
Bromomethane			8021	10
Methyl chloride;	74-87-3	Methane, chloro-	8010	1
Chloromethane			8021	0.3

3-Methylcholanthrene	56-49-5	Benz[<i>a</i>]aceanthrylene, 1,2-dihydro-3-methyl-	8270	10
Methyl ethyl ketone; MEK;	78-93-3	2-Butanone	8015	10
2-Butanone			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 0-(4-nitrophenyl)ester	8140	0.5
Parathion methyl			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
			7520	400
o-Nitroaniline; 2-Nitroaniline	88-74-4	Benzenamine, 2-nitro-	8270	50
m-Nitroaniline; 3-Nitroaniline	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
o-Nitrophenol; 2-Nitrophenol	88-75-5	Phenol, 2-nitro-	8270	10
p-Nitrophenol; 4-Nitrophenol	100-02-7	Phenol, 4-nitro-	8040	5
N-Nitrosodi-n-butylamine	924-16-3	1-Butanamine, N-butyl-N-nitroso-	8270	10
N-Nitrosodiethylamine	55-18-5	Ethanamine, N-ethyl-N-nitroso	8270	20
N-Nitrosodimethylamine	62-75-9	Methanamine, N-methyl-N-nitroso-	8070	2
N-Nitrosodiphenylamine	86-30-6	Benzenamine, N-nitroso-N-phenyl	8070	5
N-Nitrosodipropylamine;	621-64-7	1-Propanamine, N-nitroso-N-propyl	8070	10
N-Nitroso-N-dipropylamine;				
Dipropylamine				
N-Nitrosomethylethylamine	10595-95-6	Ethanamine, N-methyl-N-nitroso-	8270	10
N-Nitrosopiperidine	100-75-4	Piperidine, 1-nitroso-	8270	20
N-Nitrosopyrrolidine	930-55-2	Pyrrolidine, 1-nitroso-	8270	40
5-Nitro-o-toluidine	99-55-8	Benzenamine, 2-methyl-5-nitro-	8270	10
Parathion	56-38-2	Phosphorothioic acid, 0,0-diethyl	8141	0.5
		0-(4-nitrophenyl).ester	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-ethoxyphenyl)	8270	20
Phenanthrene	85-01-8	Phenanthrene	8100	200
			8270	10
Phenol	108-95-2	Phenol	8040	1
p-Phenylenediamine	106-50-3	1,4-Benzenediamine	8270	10
Phorate	298-02-2	Phosphorodithioic acid, 0,0-diethyl S-{(ethylthio)methyl} ester	8140	2
			8141	0.5
			8270	10
Polychlorinated biphenyls; PCBs; Aroclors	See Note 9	1,1-Biphenyl, chloro derivatives	8080	50
Pronamide	23950-58-5	Benzenamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-	8270	200
			8270	10

Propionitrile; Ethyl cyanide	107-12-0	Propanenitrile	8015	60
Pyrene	129-00-0	Pyrene	8260	150
			8100	200
			8270	10
Saftole	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)	8270	10
Selenium	(Total)	Selenium	6010	750
			7740	20
			7741	20
			6010	70
Silver	(Total)	Silver	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	Ethane, 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;	127-18-4	Ethane, tetrachloro-	8010	0.5
Perchloroethylene	58-90-2	Phenol, 2,3,4,6-tetrachloro-	8021	0.5
2,3,4,6-Tetrachlorophenol	(Total)	Thallium	8260	5
Thallium			8270	10
			6010	400
			7840	1000
			7841	10
Tin	(Total)	Tin	6010	40

Toluene	108-88-3	Benzene, methyl-	8020	2
			8021	0.1
			8260	5
o-Toluidine	95-53-4	Benzenamine, 2-methyl-	8270	10
Toxaphene	See Note 10	Toxaphene	8080	2
1,2,4-Trichlorobenzene	120-82-1	Benzene, 1,2,4-trichloro-	8021	0.3
			8120	0.5
			8260	10
			8270	10
1,1,1-Trichloroethane;	71-55-6	Ethane, 1,1,1-trichloro-	8010	0.3
Methylchloroform-			8021	0.3
			8260	5
1,1,2-Trichloroethane	79-00-5	Ethane, 1,1,2-trichloro-	8010	0.2
			8260	5
Trichloroethylene;	79-01-6	Ethene, trichloro-	8010	1
Trichloroethene			8021	0.2
			8260	5
Trichlorofluoro-	75-69-4	Methane, trichlorofluoro-	8010	10
methane; CFC-11			8021	0.3
			8260	5
2,4,5-Trichlorophenol	95-95-4	Phenol, 2,4,5-trichloro-	8270	10
2,4,6-Trichlorophenol	88-06-2	Phenol, 2,4,6-trichloro-	8040	5
			8270	10
1,2,3-Trichloropropane	96-18-4	Propane, 1,2,3-trichloro-	8010	10
			8021	5
			8260	15
0,0,0-Triethyl-	126-68-1	Phosphorothioic acid,	8270	10
phosphorothioate		0,0,0-triethylester		
sym-Trinitrobenzene-	99-35-4	Benzene, 1,3,5-trinitro-	8270	10
Vanadium	(Total)	Vanadium	6010	80
			7910	2000
			7911	40
Vinyl acetate	108-05-4	Acetic acid, ethenyl ester	8260	50

Vinyl chloride;	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 PQL 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 exist for many chemicals.
3. Chemical Abstract Service registry number. Where "Total" is entered, all species in the groundwater that contain this element are included.
4. CAS index are those used in the 9th Collective Index.
5. Suggested Methods refer to analytical procedure numbers used in EPA Report SW-846 "Test Methods for Evaluating Solid Waste," third edition, November 1986, as revised, December 1987. Analytical details can be found in SW-846 and in documentation on file at the Agency. Caution: The methods listed are representative SW-846 procedures and may not always be the most suitable method(s) for monitoring an analyte under the regulations.
6. Practical Quantitation Limits (PQLs) are the lowest concentrations of analytes in groundwaters that can be reliably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions. The PQL values listed are generally stated to one significant figure. PQLs are based on 5 ml samples for volatile organics and 1 liter samples for semivolatle organics. Caution: The PQL values in many cases are based only on a general estimate for the method and not on a determination for individual compounds; PQLS are not part of the regulation.
7. This substance is often called Bis(2-chloroisopropyl) ether, the name Chemical Abstracts Service applies to its noncommercial isomer, Propane, 2,2"-oxybis[2-chloro-(CAS RN 39638-32-9)].

8. Chlordane: This entry includes alpha-chlordane (CAS RN 5103-71-9), beta-chlordane (CAS RN 5103-74-2), gamma-chlordane (CAS RN 5566-34-7), and constituents of chlordane (CAS RN 57-74-9 and CAS RN 12789-03-6). PQL shown is for technical chlordane. PALS 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 PQL shown is an average value for PCB congeners.
10. Toxaphene: This entry includes congener chemicals contained in technical toxaphene (CAS RN 8001-35-2), i.e., chlorinated camphene.
11. Xylene (total): This entry includes o-xylene (CAS RN 96-47-6), m-xylene (CAS RN 108-38-3), p-xylene (CAS RN 106-42-3), and unspecified xylenes (dimethylbenzenes) (CAS RN 1330-20-7). PALS for method 8021 are 0.2 for o-xylene and 0.1 for m- or p-xylene. The PQL for m-xylene is 2.0 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 IV
Schedule of Solid Waste Facility Permit Application Fees

<u>Type of Solid Waste Facility</u>	<u>Application Fee</u>
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 Solid Waste Facility	\$250.00
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
<u>Major</u> Modification to Approved Solid Waste Facility	\$500.00
Background Investigation of <u>for</u> Prospective Permittee	*\$1,000.00

*Fee for each person listed in the disclosure statement required.



Department of Environmental Protection
West Virginia

DWWM Legislative Rules
Public Hearing
July 18, 2003
33CSR1

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Anne Blankship	600 United Center, 500 Va St East Charleston	Rebarism + more	

**WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER AND WASTE MANAGEMENT
AT CHARLESTON**

**IN RE: PUBLIC HEARING
AMENDMENT TO EXISTING
SOLID WASTE MANAGEMENT RULE**

The following is a transcript of proceedings had at a public hearing held to elicit comments on proposed amendment to existing Solid Waste Management Rule, held at Division of Water and Waste Management Conference Room, 1356 Hansford Street, Charleston, West Virginia, on Thursday, July 17, 2003, commencing at 6:00 p.m., pursuant to notice.

P R O C E E D I N G S

MS. GREATHOUSE: My name is Jessica Greathouse and I'm the Chief Communications Officer for the Department of Environmental Protection. This is the beginning of the formal record for the public hearing on 33 CSR 1, the Solid Waste Management Rule.

I'll start off by just reading a synopsis of the rule, and then what we'll do is I'll go down the sign-in sheet and call off your name. If you'd like to come make a comment, a formal comment for the record, then you can make your way up front and speak to the tape recorder so that we can have your comments on record.

Again, the public hearing is for 33 CSR 1, the Solid Waste Management Rule. "This rule establishes requirements for the siting (including location standards), financial assurance, installation, establishment, construction, design, groundwater monitoring, modification, operation, permitting, closure and post-closure care of any solid waste facility and adopts national standards for solid waste regulatory requirements promulgated by the United

States Environmental Protection Agency pursuant to Subtitle D as reflected in 40 CFR Part 258.

Any person who owns or operates a solid waste facility or who is responsible for the processing, composting, commercial recycling, transfer or disposal of solid waste, except for certain exempt recycling facilities, is subject to this rule.

"This rule is proposed to be amended for clarity, but in addition, specific changes have been made to the definitions, revised to reflect the new DEP cabinet organization; to clarify DEP's legal position on transfer stations; to separate and clarify Class D and D-1 landfills.

"Other significant revisions are proposed: To further identify specific acts of the illegal disposal of solid waste; to allow the secretary to terminate permits when an operator chooses not to construct or continue the operation of a permitted solid waste facility; to allow the DEP to recoup the costs associated with background investigations; to clarify landfill design criteria for channel diversions, sediment control, leachate collection and transportation, and gas management systems; to incorporate major changes in the Class D permit and

registration requirements made in 2001; to eliminate duplication with 47 CSR 60. Monitoring Well Design Standards, and provide for groundwater changes that render monitoring wells useless; to use the statistical procedures recently standardized in ASTM Standard D 6312.98 for groundwater monitoring; to require timely reporting of accidents that the DEP might wish to monitor and allow the DEP to require submission of information in standardized forms and in paper or electronic media; to change 'Sewage Sludge' to 'Sludges' to bring the rules into conformance with current agency practice; to clarify provisions related to 'free day', to eliminate obsolete, outdated provisions relating to permanently closed criteria and make provisions for gas management systems during permanent closure."

It's now time to make your formal comments for the record. I'll just read the names as they're listed on the sign-in sheet. If you did not sign in on the sign-in sheet, I will ask at the end if you would like to make a comment, just to come up and go ahead and make your formal comment. When you make your comment, please state your name and the organization you're with, and then make your comment.

First on the list is Dusty Williams.

MR. WILLIAMS: My name is Dusty Williams and I'm here representing myself. Just as a little background, I've worked in this industry for about 15 years and have experience in about three states and multiple landfills. I saw the rewrite of the regs and wanted to make some observations.

I brought down two copies. There are a couple of items though that I want to address beyond the comments that are written. They're in no particular order. I think I'll save the best for last.

The new provision says that we'll now have to have dual contained detection and collection transmission lines. That seems to be moving forward after I think July 2004. It's one of the few places where there isn't a defined date.

It seems though that there's been a fairly good history of the integrity of leachate transmission lines, and with the HDPE, high density as thick walled and pressure testing, it seems as though there's nothing wrong with that. It is much more costly and obviously much more difficult to put the dual containment lines in.

The bonding issues have stayed the same. Many rules don't even identify the agreement between the PSC and DEP. Since they have essentially stayed the same, there really are no guidelines for the releasing of bonds or the issue that we've discussed in the past, that is, we're putting, paying into the escrow accounts for the Public Service Commission, and as those dollars grow, there's no way to offset the bonding requirements.

That's extremely important. I would suspect that every landfill in the state is now paying into the PSC escrow accounts. I know of sites that have five or six million dollars in it and the projected closure expenses are already covered and there is still bonds, cash. There needs to be a formal mechanism to get them released and identified.

I know very little about groundwater. Groundwater was something where we hired professionals to do the work. I know for sure that groundwater is the life blood of a landfill and it is extremely important to protect the groundwater through the operation up to and including the testing, the performance, the people that are doing the sampling.

I believe that there is going to be a significant change in the groundwater rules, one of which concerns me is that a dry well now means it's not a good well. Potentially it has to be redrilled. In the 13 to 15 years that I've been doing this at a total of probably eight sites, it is not uncommon to see wells go dry and then to see those wells recharge.

You know, you're talking about the statistical background. You throw a well out, you drill another one. Now you have to go through multiple cycles, the whole ten yards. I'm somewhat concerned that there may be a change in philosophy or implementation of a program that the State has been using for quite some time and the networks that landfills currently have.

And so, I would hope that that is going to be analyzed, going forward with facilities and with whatever the new regulations are because, again, you know, there's a lot of history at landfills with their groundwater as it is now.

I know of LCS, there was a couple wells that stayed dry that showed back up. We've had the problems in Maryland. There's an issue about the clustering of wells

and the newer definition of the monitoring system or whatever it's called. When you have close clusters, generally you're going to multiple horizons, very different horizons. And so, I think that there's potentially some concern with the industry in that regard.

I guess the final thing in this group that I want to talk about is elimination of the word "final" in outside slopes. There's two more things I want to do. This is a significant and important issue, and I recognize -- I'm not here to argue with the DEP about slope stability and about slope configurations. That is not my point.

What is my point is that depending on the configuration of the landfill, you can have -- a significant portion of the surface area becomes outside slopes. As you build your outside slopes, and if you build them into compliance with this and you go 3:1 with the benches on 20 foot vertical spacing, over a period of time the slopes lay back, and they lay back from the bottom to the top.

What happens is we have a wedge of lost waste, and that sliver is impossible to get back. You just can't practically go start here and fill back up. With the concept of drilling the passive gas wells and many, many

companies and landfills wanting to cap as soon as they can, you have this problem.

What our experience has been in the past is that what we do, we build 2-1/2:1 with the benches on 20 foot, and when it lays back, it lays back so that it's still flatter than 3:1, but it's a whole lot better than it would have been otherwise.

When landfills, from an economic standpoint when the analysis is done, you say I have six million yards of capacity and I have so much cost in the development of it. And you come up with what you think the conversion factor is to turn yards into tons, because that's how you get paid.

If you assume that you're going to get four million tons out of that six million yards, and with the lay back you lose 10 or 12 percent, then your costs have gone up substantially.

There have been plenty of slope stability analysis to show that a 2-1/2:1 with the benches has a safety factor of 1.7 or greater. There is no question that they can be built. They're standing in many places in this state and have for a long time.

So I would hope that the DEP would give some consideration to affording either responsible operators an opportunity to come in and say, "We can do this," because if they don't, there's eventually, I promise as sure as we're sitting around this table, there's going to have to be a rate increase for landfills if that ultimately gets done. There is no ifs, ands, or buts about it.

It hasn't done anything to compromise the stability or enhance the stability of the slopes. So again, I hope the department will give some consideration to petitioning or whatever is necessary for that. There's a lot of empirical data out there to show layback, what it does, what the settling does, so it can be predicted.

The final thing that I was hoping maybe this evening to get an answer that I included, the passive wells. Is that going to -- are you going to have to take a landfill that's got 35 acres of line now and go in and drill 35 wells, or is that going to be prospective moving forward? Is that something that could be answered now just out of curiosity?

MALE VOICE: This is prospective for that.

(Inaudible.)

MR. WILLIAMS: That's fine. Thank you very much.

MS. GREATHOUSE: Next on the list is Jim Hern.

MR. HERN: I don't have a lot to say. I'm really here just to listen mostly. My name is Jim Hern. I'm with REI (phonetic) Consultants.

One issue that wasn't real clear to me with regard to these regulations and the old ones, as well, was relative to groundwater monitoring and groundwater quality evaluations, some of that dealing with what actually activates a facility into an accelerated monitoring program, especially with regard to secondary components that many other regulatory agencies in other states don't require, such as what we call secondary criteria, things like sulfate, iron, things of that nature.

I'm not sure it's really identified well in the regulations as to how those are to be considered in the status of the monitoring programs, and I'd like a little more clarification in that regard, as well as statistical procedures as to which we've done in the past and now the transition into the new, which I guess is upon the professionals' responsibility to go and find those and implement those, I should say.

That's my primary concern, and I hope that the consideration in the new regulations will provide guidance in those regards. That's about all I really have to comment at this point.

MALE VOICE: Jim, did you put that in writing? Did you submit a written comment?

MR. HERN: No, I didn't put that in writing. If you would like --

MALE VOICE: Yes.

MR. HERN: We'll do that.

MS. GREATHOUSE: Next on the list is Chris Daniels.

MR. DANIELS: My name is Chris Daniels with Alliance Consulting. I'm the resident engineer for the City of Charleston Landfill, Disposal Service Incorporated Landfill, and LCS North Mountain Landfill.

I don't have much to say but I would like to make a statement. On behalf of Alliance Consulting I would like to state that due to the technical nature of our comments and in the interest of time, I plan to make only a brief statement today. We do plan, however, to submit

comprehensive written comments by the comment period deadline of July 28, 2003.

The proposed changes to the Solid Waste Management Rule are overly broad. With an industry approaching 15 years old, implementation as proposed will have both an economic and operational impact for each facility with little, if any, environmental benefit.

Prior to advancing any rule changes to legislative action, we strongly advocate establishing a committee that represents a cross-section of the industry, private operators, municipal operators, county solid waste authorities, consultants, and regulatory permitting and enforcement personnel to evaluate these changes and form some consensus that the changes are reasonable, practical, justifiable, and environmentally necessary.

To simply enact wholesale rule changes due to changes in personnel or to exceed EPA guidelines which are often used as a benchmark is unduly burdensome on the solid waste industry in West Virginia. Thank you.

MALE VOICE: This factor lies with everybody. The deadline is the 28th, noon on the 28th to hand in written comments so we can have time to get the mail in, and give

people time to respond to comments by the end of the deadline.

MR. DANIELS: Is there any need to put this in the record?

MALE VOICE: It doesn't matter.

MR. DANIELS: Thank you.

MS. GREATHOUSE: Next on the list is John Tuckwiller.

MR. TUCKWILLER: I came here for observation so we know what to do (inaudible) what's going to happen.

(Inaudible.) Our engineers will have handwritten comments.

MS. GREATHOUSE: Okay, that's fine. Next on the list, I can't read the name but I know it's the gentleman in the blue shirt there.

MALE VOICE: I'm withdrawing. This is the first occasion we've had to review the rule really.

MS. GREATHOUSE: Next is Linda Tenant.

MS. TENANT: I have none.

MS. GREATHOUSE: No comments? Okay. Next is Michael Hope.

MR. HOPE: For observation.

MS. GREATHOUSE: Okay. Gary Bledsoe.

MR. BLEDSOE: I'd like to thank you for allowing us to come down and present to you. I'll start by introducing myself. I'm Gary Bledsoe. I'm a professional engineer. I'm also a business person. Also, I'm co-chair of Raleigh County Solid Waste Authority and coach here of the Association of West Virginia Solid Waste Authorities, and a taxpayer.

I have been authorized to come and speak to you by both Raleigh County and the Association about our concerns of some of the rule changes. I would like to thank you for extending the written period, the deadline to give us some opportunity to look at these regulations in detail. They're quite extensive and for some of us it's our first exposure.

There are five issues that I want to speak to with regard to the rule changes. First is the groundwater testing. Second is free day. Third is the minimum fill slopes. Fourth is the C&D permits. Fifth could be a result of all those, which would be rate increases for the solid waste authorities or landfills.

I'm going to give you some costs on some of these issues. They are based on Raleigh County's Solid

Waste Authority's models and experience. I'd like for you to also recognize that these costs relatively, or approximately 20 percent of those moneys come back to the State for their programs.

The first item is the groundwater testing. We consider this to be a very major change and we're very apprehensive about this. We'd like for you to look at that very carefully. We believe it's going to cause us to have to drill new wells that is going to require additional testing, and it may require additional wells to be drilled as the water table changes and the requirement to test at the top of the aquifer. If the well becomes a dry well, we have to retest, redrill.

We believe that this cost represents to us in the first year about \$600,000, and then annually about \$300,000 thereafter, giving us a cost around five years of 1.8 million. We consider this a very large number and we would question the benefit of this change for that cost.

Again, this is a large number for us. Although it would be much smaller for some of the smaller landfills, it could be even more detrimental to those that

are struggling or are marginal. So it needs to be looked at very carefully.

On the free day, this is an area that's been debated. I've been involved in the business approximately five or six years, and this has been talked about as a major issue. There's no changes in the regulations on the rules, but this might be a good opportunity to look at that because with one simple, little definition you could help clear that issue up.

I would also want to point out to you, for Raleigh County we don't see this as a big financial issue. We see it as an operational issue. But we also know that a lot of the solid waste, the smaller solid waste authorities or landfills struggle with this because it can represent as much as 10 percent of their income gone monthly.

We feel the cost to Raleigh County is about \$8,600 per month, about \$103,000 annually, and about \$515,000 over five years. So it's not a little problem.

Now with one real quick little simple change in the regulations and the rules, we can really make a big change, and that is to go in and define who is the eligible person. I'd like to read this definition. "Who's defined

as an eligible free day participant by meeting the following criteria: 1) does not have access to a commercial solid waste hauler; 2) does not have the ability to pay for service, and 3) is not in the business of hauling or disposing of solid waste."

With that definition that will allow the solid waste authorities or the landfills to manage who gets that benefit. Raleigh County sees somewhere around 700 persons per free day. Again, it's frustrating for us because it costs us operating costs to people. It causes traffic jams. It's a big issue in that sense. And you can see, cost-wise it's still a pretty big item.

The next item is the minimum fill slope. Again, I'm a civil engineer by a degree. The good practice for general backfilling (tape out) slope. A 4:1 slope is pretty excessive. Again, I want you to understand -- and we think that this came out of a landfill that had, maybe wasn't built properly, maybe wasn't watched carefully and caused a problem, and then we tightened up the slopes to solve that problem, but yet, we caused a major impact to other landfills who were doing the work properly.

Now I don't know how you handle that, but I would bring this to your attention. That flatter slope dramatically decreases our air space, our usable landfill area. We estimate that that will cost us about 15,000 per month, 180,000 per year, and 700,000 over five years. So it's no little thing going from a 4:1, or excuse me, a 3:1 to a 4:1 or 2-1/2 to 4:1. So we would like for you to consider going back to an industry standard in order that we can take advantage of that space, air space.

The C&D permitting is another issue that we are a little frustrated about. We have gone out and developed our own C&D area, construction and demolition material disposal. Right down the road five miles from us they're doing the bypass around Raleigh County around the city of Beckley. There are approximately 40 structures being demolished. That's not coming to Raleigh County Solid Waste Authority. Now we believe in free enterprise. If they want to take it over to John Tuckwiller and get rid of it, that's great. Go for it.

However, it's going to a small permitted landfill, unregulated, uncontrolled. Well, it supposedly

is. But let me tell you, I'm sure there's asbestos shingles and asbestos tile that very well are going into those areas. So you're creating a problem. You're actually creating a very bad problem because somebody some day is going to have to pay for that and straighten that up.

We estimate that this probably costs Raleigh County about \$31,000 on this one demolition project. We've gone to the trouble of putting in a C&D area and we're controlling it. It's within our control area.

There ought to be some limitations. You shouldn't just pass out C&D permits at any request. It still needs to be in a controlled area and if you set some kind of limitation of, say, 50 miles from an established C&D landfill, that would give I believe the population a better control, better assurance that that material is going in the proper place. And of that 31,000, about 20 percent didn't go the State either.

The last item is the rate increase. If these items, if these issues stay in place, we estimate that we'll have to go the Public Service Commission and look at a rate increase. We're about 5.5 million dollars, our budget is a little less than that, and you can see some of these numbers

are pretty sizable. We very well will have to be looking at a 10 percent or thereabouts increase in order to cover that.

Again, we question whether there's a need to do that. We've done a great job of holding our rates and we've worked hard at that, and we'd rather not have a rate increase. We'd like to see these issues, better solutions and a more practical solution.

Of all these issues, we do, in conclusion, feel that the water testing, the groundwater testing is a major issue that will affect a lot of people, and we'd ask that you really look at that and consider whether that's worth making those changes or not. Thank you.

MALE VOICE: You're leaving copies, Gary?

MR. BLEDSOE: Actually, I will send a follow-up written --

MALE VOICE: I just want to take that definition of free day and take it to the Legislature, this is Gary Bledsoe, by golly, here you go.

MALE VOICE: May I ask this gentleman a question? May I ask you a question?

MR. BLEDSOE: Yes.

MALE VOICE: About the asbestos on that project, do you have any knowledge of it?

MR. BLEDSOE: Well, I want to be careful. I can almost bet you good money there were buildings there with asbestos siding, because they're usually overlooked.

MALE VOICE: Are you talking about the DeCilio (phonetic) project out on the four-lane?

MR. BLEDSOE: Yes.

MALE VOICE: No, that asbestos was removed because I removed it. My company removed it. We did not have nothing to do with the demolition though, so I can't comment on that. But I do know the asbestos was removed.

You've got to watch how rocks are being thrown on comments of things like that, because --

MR. BLEDSOE: The facility in Logan does a great job and a quality company, but not all companies do that. I think philosophically we're talking about being able to look at this issue with new (inaudible) since other landfills are (inaudible.)

And I would say to you again that the cost of taking it off site to a rural property and disposing of it

is probably not socially good. You've actually destroyed that property for future usage.

If you've already developed a C&D area, and it's at a lesser rate to make it more beneficial to the contractor, then why do you develop those areas and have that control not to use them.

So again I would strongly say that just giving C&D permits anywhere in the state, any little contractor is not a very good thing. It ought to be looked at more carefully and more controlled.

MALE VOICE: I'm just commenting on the asbestos. I can't comment on the demolition that's done on the project. It just so happens I figured that was the project you mentioned and I just wanted to set that straight.

MS. GREATHOUSE: Next on the list is Eric Haynes.

MR. HAYNES: I just wanted to comment on the C&D landfills. As Mr. Bledsoe was saying there, he's wanting more stringent rules on the C&D landfills. Well, he's going to push the smaller guys completely out of business and it's going to monopolize the industry to the bigger companies. There's only going to be a few left in the state and there's

only going to be a few companies that's going to be allowed to do demolition.

That's basically all I have to say about it. I'm sure we'll have a written comment later on.

MS. GREATHOUSE: Those are all the names that I have on the sign-in sheet. Is there anyone that did not have the chance to sign in yet, but would like to make a comment?

MR. PICKENS: I didn't get to sign in. My name is Larry Pickens.

MS. GREATHOUSE: Larry, come on up front so I can get you on record here.

MR. PICKENS: I'd just like to address the C&D issue because, along with Mr. Haynes here, it's still an issue of a small contractor being put under the thumb by a larger area, like a whole county saying, we're operating this as a county-wide thing and you don't have the right to run this because you're not running it right.

Well, we've been operating a landfill for the past 15 years and I think we've kept a pretty good job of it. We control what goes in it. Most everything is documented from companies that remove the asbestos, because

you can't tear a house down until you have letters of certification saying it's been removed.

But to just say that there's -- I don't know of a majority of contractors running out here just ripping buildings down and throwing them in landfills just without doing testing and all the stuff that needs to be done. It's watch-dogged by everybody.

You can't go out and do much of anything without some office of the state saying, hey, what are you doing, from the groundwater act to air. If you're not spraying enough water on something, somebody's fussing about that. I mean, how do you tear a building down without making dust? If anybody figures it out, let me know. I want to get a copy of how to do it.

Like I say, we just run a small landfill but with these regulations, it's really making it tough on a guy that tries to just run a small company. I understand that bigger organizations can justify of having a landfill and wanting the dollars that it takes to generate to run that landfill. It costs us dollars to run our landfill. We have to pay for an operator to keep everything pushed and covered, and it's a large expense. I don't have it broke

down per dollar like a lot of you other guys do because I'm too small. I just do it. That's just what I'd like to say.

MS. GREATHOUSE: Thank you. Is there anyone else that had not signed in on the sign-in sheet that would like to make a comment?

MR. DAVIS: I've got one more comment if I could make it.

MS. GREATHOUSE: Okay.

MR. DAVIS: My name is Denver Davis. I got a chance to read over some of this. I've got some real, real questions about some of the language in your laws not being clear enough, not being plain enough. I'm going to start here and kind of work myself down here.

In C&D, I'm going to use that for an example. I'm not interested in the larger ones. You've got no metals, but still past practices over the years, it's hard to do a building demo without some kind of wire, some kind of sheetwork framing, some sort of metal.

You're getting to the point there if an inspector wants to, he can say, "Well, these nails are metal. We're shutting you down." I'd like to see something more plain saying, X amount of square inches, X amount of

square feet per item. I mean it's too broad and open. A rule or regulation without being plain is basically a rule or regulation that can't be enforced or it will be abused.

The next thing is -- like I said, I just had a chance to brief over it -- is the roofing material in the C&D landfills. My understanding is from this new regulation there will not be any bituminous material put in a landfill, as far as roofing.

My understanding is that this would be, if you go in and tear down a house, correct me if I'm wrong whoever has written these rules up, if you tear down a house, you cannot put this roofing material in with the debris.

Well, this means that the city here -- I've got the city contract and doing some demo and stuff -- and if you tear this house -- you know, I give them a square foot price. If we go in and tear this house down and this roof has fallen down, these are condemned houses, it's almost impossible to remove this roofing on these structures.

Now if your intent is that roofing contractors don't come in and dump in Mr. Pickens landfill,

that's one thing. That's very plain. But the way -- I do not know the intent of this law and it needs to be clarified that you're still going to let these houses or commercial buildings be tore down and the roofing material mixed in with it, which is only a 2 percent of a house or less would be the roofing material, or is this law strictly for no roofers coming in and dumping in this?

Some of these things need to be clarified just a little better is what I'm getting at.

MALE VOICE: Have you gotten that written up for us?

MR. DAVIS: I can. We will have it written up.

MALE VOICE: I appreciate that. I mean, that's helpful, you know.

MR. DAVIS: Like I say, a lot of these laws right here and rules, it's on the inspector. If the inspector says, you know, metal is metal. If he comes out and says, ■You've got 50 pounds of nails in here. We're shutting you down.■ you're wide open. We're at the mercy of the DEP.

MALE VOICE: (Inaudible) on the thing there, but if you've got more specific examples, I'd like to (inaudible.)

MR. DAVIS: I'll be glad to get that in writing with the rest of the things.

MS. GREATHOUSE: Is there anyone else that would like to make comment? If not we'll go ahead and close --

MR. WILLIAMS: I'd like to make one more comment.

MS. GREATHOUSE: Okay. You have to come up here, Dusty, so I can --

MR. WILLIAMS: No, that's all right. It would be real nice if a good index could be made for the regs. It would be real nice (inaudible) throughout. And even for everybody who's familiar with it, it's sometimes hard to find, and if you could get a good index, that would be good.


MS. GREATHOUSE: Any other comments for the record? We'll go ahead and close the formal public hearing. Keep in mind for this rule the comment period has been extended until July 28. Comments must be received by that day at noon to be considered during this public comment period. Those comments can be sent here to the Division of Water and Waste Management at 1356 Hansford Street, Charleston, West Virginia, 25301.

This concludes the public hearing. Thank you for coming.

(WHEREUPON, the public hearing
was concluded at 6:45 p.m.)

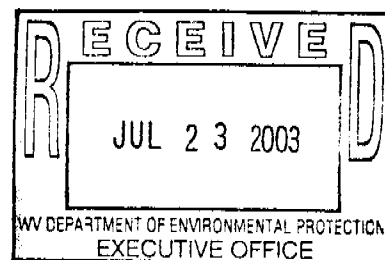
TRANSCRIPTIONIST'S CERTIFICATE

I, Betty L. Edens, do certify that the preceding transcription was made from an open-mike tape supplied by the Division of Environmental Protection, Division of Water and Waste, and is to the best of my ability a true and accurate transcript of proceedings had in the above-mentioned hearing.


Betty L. Edens, Transcriptionist

Mercer County Solid Waste Authority

**753 Frontage Road
Princeton, WV 24740
304-425-2939
304-487-9455 (fax)**



July 21, 2003

**Stephanie Timmermeyer, Cabinet Secretary
West Virginia DEP
1356 Hansford Street
Charleston, WV 24301**

Dear Ms. Timmermeyer:

The Mercer County Solid Waste Authority would like to have this letter entered as an strong objection to your proposed changes to ground water monitoring techniques.

After conferring with our engineering consultants Alliance Engineering, our water monitoring consultant REIC Labs, and with other landfill professionals throughout the state, we feel that the changes you are proposing could be extremely costly, with little indication that they will result in any improved quality of sampling. It is our understanding that your limits and testing standards will be much higher than that required by the EPA.

Our landfill has already seen a 35% reduction in flow in the last 4 years due to waste taken to Virginia. Any additional cost that requires a tariff increase would just make us that much less attractive to West Virginia haulers. We urge you to enforce existing regulations, ensuring compliance by landfills, labs, and haulers who seem to have no respect for existing regulations for transfer stations, instead of placing additional financial burdens on the landfills. Especially when the changes have no proof they will generate any benefit to the citizens of our state.

Sincerely,

Jerry L. Haynes, Manager

MEMORANDUM
July 14, 2003, 9:46am

To: All Solid Waste Authorities, Land Fill Operators, & Associated Parties
From: Gary O. Bledsoe, Co Chair AWVSWA & Co Chair RCSWA
Ref: WVDEP Rules 33 CSR 1

It has come to the Associations attention that new rule changes for WVDEP 33 CRS 1 are available for review and comment at web address

<http://www.dep.state.wv.us/Item.cfm?ssid=10&SS1ID=638>.

Public hearing is scheduled for July 17, 2003, 6:00pm at WVDEP conference room.
Written public comments must be presented before July 28, 2003 at 1:00 pm to
Attn: Anne Howell
WVDEP - Division of Water and Waste Management - Solid Waste
1356 Hansford Street
Charleston, WV 25301-1401

Association of West Virginia Solid Waste Authorities (AWVSWA)

I have been authorized by the Board of Directors of AWVSWA to request of West Virginia Department of Environmental Protection to extend the time for review to allow for thorough research of the changes and there impact to the Authority Members. The Public Hearing is still scheduled for July 17, 6:00pm; however, the deadline for written comments has been rescheduled for July 28, 2003, 1:00pm.

The following areas are of concern and require careful consideration by the members and the regulatory agencies:

GROUND WATER TESTING

There are major changes in ground water monitoring on page 29 thru 33 that will cause large cost increases for Landfill Operators. These changes cause re-drilling of wells to facilitate sampling of water at aquifer surface levels. If the water table varies during the year causing dry wells, new wells will have to be drilled. Test samples will have to be taken at more frequent intervals in order to meet stipulated accuracies. This is a major change in water quality monitoring to sample floating particles verses testing for disbursed particles. This change exceeds Federal requirements with questionable benefit and definite cost increases. A costing model is being prepared for both a small landfill and a large landfill and will be made available to the members.

FREE DAY

Free day has been a talked about issue each year for the last several years. It negatively impacts both large and small land fills and is growing each year. Small landfills have as much as 10% of their garbage delivered on Free Day. Large Land fills have as much as

1000 loads delivered on Free Day causing major disruption of community traffic and operations. Everyone agrees that it was created to help the rural person who has no garbage pickup and the person who can not afford garbage pickup by have one day a month that they can dispose of garbage free at landfills rather than burn or through it over hill sides. This has grown to the point that it is a citizens right to free service. As matter of fact no one or very few individuals meet this category any more. Land fills can better manage this problem by clearly defining who is eligible for this service as follows: "Eligible Persons are those persons who do not have garbage service available for their area or do not have means for paying garbage collection fees."

CONSTRUCTION & DEMOLITION (C&D) PERMITS

C&D permits have been easily obtained on the believe that C&D materials are less hazardous requiring less protective controls and should be exempt from higher protective cost. Most Landfills have developed C&D areas at reduced fee structures for consumers to meet this need in a controlled environment. The reality is that there is a high cost for these simple C&D permits. That is the land they are placed on is no longer usable for future owners and may contain hazardous materials or negatively impact the environment through ground water contamination or run off. Eliminate smaller permits and require users to go to established centralized areas where C&D material can be monitored in an environmentally controlled area along with other types of solid waste.

FILL SLOPES

Restrictive and unreasonable stability slopes are being required which causes major loss of air space. These flatter slopes are well beyond normal practice. Minimum Slopes should be set to meet established practices. This practice will shorten live spans of waste areas and unnecessarily drive up cost to the consumer.

CONCLUSION

It seems interesting that on one hand we cause increased operating cost to establish operating facilities and on the other hand we allow for free usage financed by consumers and minimal controls on C&D materials. It is important to have consistency for clients and justification to tax payers.

If you or your Association has concerns about these areas now is the time to offer comments to the WVDEP that will hopefully result in changes that will benefit all West Virginians.

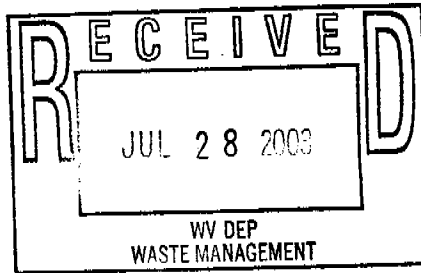
Prepared By Gary O. Bledsoe, PE
gbledsoe@esione.com

Memo is also shown on new web page www.awvswa.com. It can be downloaded and modified for your own use.



RESEARCH ENVIRONMENTAL & INDUSTRIAL CONSULTANTS, INC.

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 - Association of West Virginia Solid Waste Authorities
 - West Virginia Oil Marketers & Grocers Association

July 25, 2003

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DEPT. OF ENVIRONMENTAL PROTECTION
SW & E R S SECTION

Mr. Michael Dorsey
WVDEP
Office of Waste Management
1356 Hansford St.
Charleston, WV 25301-1401

RE: Comments, Proposed Changes to Solid Waste Management Rule
(33 CSR 1)

Mr. Dorsey;

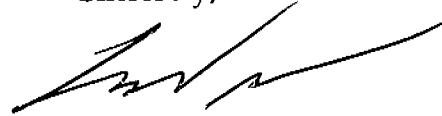
REI Consultants, Inc. (REIC) respectfully submits the following comments regarding proposed changes to the West Virginia Solid Waste Management Rule, 33 CSR 1.

- Proposed Rule 3.8.d.1.G. This rule would require statistical evaluations of well data when wells are dry or yield insufficient volume for sampling, and subsequent replacement if indicated as necessary by the statistical evaluation. The replacement of wells should be based upon professional judgment on a case-by-case basis, with active dialogue among the Division and permittee, but not bound by the proposed statistical constraints. The statistical evaluations are valuable in assisting with the above process, but should not be the sole basis of further action.
- Existing Appendix I. The existing Appendix I list of Phase I detection monitoring constituents contains 24 inorganic parameters that are not included in the 40 CFR Part 258 Appendix I list. The West Virginia Appendix I list should reflect the EPA Appendix I list. At a minimum, the additional parameters should be reviewed and evaluated based upon their value or reliability in indicating waste influence, and those parameters with little or no use toward this end should be eliminated from Appendix I.

Page 2
Letter to Mr. Michael Dorsey

Should you have any questions or need further information, please do not hesitate to call me or Jim Hern at (304) 255-2500.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Hofe", written in a cursive style.

Michael Hofe
REI Consultants, Inc.



BOARD MEMBERS

Tim Blankenship
Alice Jo Buzzard
Mallie Combs
Martha H. Moore
Paul Nusbaum
Joseph Ross
Stephanie R. Timmermeyer

**West Virginia Department of
Environmental Protection**

SOLID WASTE MANAGEMENT BOARD
1615 Washington Street, East
Charleston, WV 25311-2126
Phone: (304) 558-0844 FAX: (304) 558-0899

July 28, 2003

GOVERNOR
Bob Wise

CABINET SECRETARY
Stephanie R. Timmermeyer

DIRECTOR
Richard P. Cooke

WV Department of Environmental Protection
Division of Water and Waste
Attention: Anne Howell
1356 Hansford Street
Charleston, WV 25301-1401

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JUL 28 2003

DEPT. OF ENVIRONMENTAL PROTECTION
SW & ERS SECTION

Dear Ms. Howell:

I am submitting one additional public comment regarding the proposed Solid Waste Management Legislative Rule 33 CSR 1. This public comment is to place emphasis on "reporting" and reiterate my written public comment number seven (7) submitted July 22, 2003.

Recommendation: Under subsection 4.14. "Free Day" add a subparagraph that states, 4.14.c.9 All commercial landfills both public and private must include all free day tonnage received in the monthly solid waste tonnage report required by paragraph 4.12.b. of this rule.

If you or Mr. Patel have any questions or require further explanation, please do not hesitate to contact me.

With kindest regards,

Richard P. Cooke,
Director

RPC:mlp

cc: ✓ Sudhir Patel, Permitting Supervisor, SWMU





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Environmental Protection**

SOLID WASTE MANAGEMENT BOARD
1615 Washington Street, East
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July 22, 2003

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Bob Wise

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DEPT. OF ENVIRONMENTAL PROTECTION
SW & E R S SECTION

WV Department of Environmental Protection
Division of Water and Waste
Attention: Anne Howell
1356 Hansford Street
Charleston, WV 25301-1401

Dear Ms. Howell:

I respectfully offer the following written public comments and recommendations concerning the proposed Solid Waste Management Legislative Rule 33 CSR 1.

- 1) I recommend that a Table of Contents be included at the beginning of the Rule which identifies the major items in the Rule and page numbers. A Table of Contents would make the Rule user friendly and will enable the reader to more efficiently and effectively utilize this document in a timely fashion.
- 2) DEP Proposed 1.6.c. Solid waste may not be disposed of in a dumpster belonging to any person other than its owner. Such disposal is in violation of W.Va. Code § 20-7-27.

Recommendation: I believe that 20-7-27 is in error and should be replaced with 61-3-53, "Unauthorized Use of Dumpsters."

- 3) DEP Proposed ~~2.16~~ 2.18 "Bulky Goods" means large items of solid waste such as furniture, large automobile parts, water heaters, or other large, discarded appliances, televisions, or metal and other products which are introduced to a solid waste landfill facility for disposal and whose large size precludes, or complicates their handling.

Recommendation: This definition implies that bulky goods are introduced to a solid waste facility for disposal when in fact most are recycled for metals recovery and revenue generation. For example, the DEP Pollution Prevention Open Dump



(PPOD) Program probably collects more bulky goods than any other state or local agency in our state and I believe that their records would reflect that the vast majority is recycled not disposed. Therefore, I suggest that before the word "disposal" the words "recycling or" be inserted. Additionally, I would suggest that the definition of bulky goods in 33 CSR 1 be reasonably consistent with the definition of bulky goods in Legislative Rule Title 150 Series 9, Subparagraph 1.8.b.Public Service Commission.

- 4) DEP Proposed 2.128 "Staging Area" means an area or facility where solid waste is stored, sorted and/or processed for transport to a solid waste facility. Staging areas are prohibited unless specifically approved or permitted by the Secretary.

Recommendation: I suggest that before the word "stored" the word "temporarily" be inserted.

- 5) DEP Proposed 3.14.b.3 Additional Costs - Should the cost of the background investigation be more than the nonrefundable investigation fee paid by the permittee described in subdivision 3.14.b, the permittee will reimburse the department for its costs beyond those paid by the permittee's investigation fee.

Recommendation: I suggest a comma at the end and adding the words "prior to the issuance of a solid waste facility permit."

- 6) DEP Proposed 3.16.e.2.B One-half Acre Exemption. 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 permitting requirements of this rule when generation and disposal occur on the same property, 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~~ This exemption for landowners does not apply to multiple one-half acre sites on the same parcel of land.

Recommendation: This exemption does not provide any safe-guards to protect prospective purchasers of land. For example, a landowner may fill up to one-half acre or approximately 21,780 square feet of land area with construction/demolition waste material, unbeknown to anyone else and then sell the land. The purchaser may have bought the land for the purpose of erecting a large (100 ft. x 50 ft.) permanent building. Whereas not all construction/demolition waste is suitable for structural fill, the structural integrity of the permanent building could fail as a result. Therefore, I would suggest that this exemption should at least require a landowner who fills more than one-quarter acre to be responsible for preparing a map showing the specific location of the fill area on the land, types of construction and demolition waste utilized as fill material, approximate depth of fill material, dates fill material was placed and record this map with the property deed description on record in the county clerks office.



- 7) DEP Proposed 4.12.b.3 The monthly tonnage report must clearly identify the out of shed waste, and the total waste from each state other than West Virginia. The report must also list the tax-exempt tonnage and any other the tonnage that does not count against the facility's monthly capacity.

Recommendation: The first sentence as written implies that waste from West Virginia does not have to be reported. I suggest deleting the words "other than" and inserting the word "including". In the second sentence there is a typographical error and the word "the" before the word "tonnage" should be deleted. Additionally, I suggest that there should be a third sentence which says, "All free-day tonnage must be included in each monthly report."

- 8) DEP Proposed 4.14.a.1. "Residential solid waste" means garbage, rubbish, trash, furniture, household appliances and other similar wastes generated at residential property, not herein specified.

Recommendation: I suggest that the term "not herein specified" should not be at the end of this sentence, but should be inserted after the word "wastes" so that this section would read; "Residential solid waste" means garbage, rubbish, trash, furniture, household appliances and other similar wastes, not herein specified, generated at residential property, ~~not herein specified~~.

- 9) DEP Proposed 4.14.c.1. All commercial and public landfills ~~shall~~ must submit and receive prior approval from the Department of the landfill facilities' proposed monthly free day schedule. The proposed monthly free day schedule must be approved twenty (20) days prior to the initial date of publication each calendar year. The date of the proposed free day schedule for each consecutive month must be separated by at least twenty (20) calendar days. Following the publication, the landfill facility must submit to the director Secretary a copy of the established and published yearly schedule of the free day within 15 days of publication. The yearly schedule shall must be posted at the facility and must be clearly visible and legible to all customers.

Recommendation: The beginning of the first sentence could be interpreted to imply that public landfills are not commercial solid waste facilities. Therefore, I would suggest that the beginning of the first sentence should be restructured to read as follows: "All commercial landfills, both public and private..." Also I suggest amending the fourth sentence to read, "Following the publication, the landfill facility must submit to the director Secretary and the department's Solid Waste Management Board a copy of the established and published yearly schedule of the free day within 15 days of publication.

- 10) DEP Proposed 7.5.b. Waste-In-Transit Inspections. – The ~~director~~ Secretary may designate authorized representatives to coordinate with authorized representatives of the commissioner of the West Virginia Division 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 of Highways.


Recommendation: It is my understanding that most waste-in-transit inspections of solid waste haulers are conducted by the Public Service Commission of West Virginia, under the Transportation Division, Motor Carrier Section. Therefore, I would suggest after the phrase "West Virginia Division of Highways" inserting the phrase "and the Public Service Commission of West Virginia".

- 11) DEP Proposed Appendix IV Schedule of Solid Waste Facility Permit Application Fees.

Recommendation: The second to last category is titled "Modification to Approved Solid Waste Facility." Whereas there are two types of permit modifications, minor and major, it is assumed that this category is referring only to Major Modifications and I suggest that the word "Major" should be inserted before the word "Modification." Additionally, I would emphasize that a major modification is a significant and time consuming permitting action on both the permitting staff of DEP and the permittee. Therefore, I would question if the current application fee of \$500 is adequate.

In closing, I appreciate the opportunity to submit the above public comments for your consideration. If you have any questions or require any clarification of the recommendations, please do not hesitate to call me at 558-0844.

With kindest regards,



Richard P. Cooke,
Director


RPC:mlp

cc: Mallie Combs, Chair, SWMB



July 17, 2003

On behalf of Alliance Consulting, I would like to state that due to the technical nature of our comments and in the interest of time I plan to make only a brief statement today. We do plan, however, to submit comprehensive written comments by the comment period deadline of July 28, 2003. The proposed changes to the Solid Waste Management Rule are overly broad. With an industry approaching 15 years old, implementation as proposed will have both an economic and operational impact for each facility, with little, if any, environmental benefit. Prior to advancing any rule changes to legislative action, we strongly advocate establishing a committee that represents a cross section of the industry, private operators, municipal operators, county solid waste authorities, consultants, and regulatory permitting and enforcement personnel to evaluate these changes and form some consensus that the changes are reasonable, practical, justifiable, and environmentally necessary. To simply enact wholesale rule changes due to changes in personnel or to exceed EPA guidelines, which are often used as a benchmark, is unduly burdensome on the solid waste industry in West Virginia.


Christopher M. Daniels
Project Manager
Alliance Consulting, Inc.

July 25, 2003

Mr. H. Michael Dorsey
Assistant Director
DIVISION OF WATER AND WASTE MANAGEMENT
1356 Hansford Street
Charleston, WV 25301

Comments
Proposed Rule Changes
33CSR1, The Solid Waste Management Rule
West Virginia Department of Environmental Protection
Charleston, Kanawha County, West Virginia

Dear Mr. Dorsey:

On behalf of Alliance Consulting, Inc. (Alliance) we are pleased to offer the following comments on the proposed changes to 33CSR1, The Solid Waste Management Rule (Rule). We would like to state that although we are in agreement that some of the regulations warrant reconsideration and implementation, we are not in general agreement that a wholesale change in the Rule is justified at this time. The impacts of these proposed changes are very broad and affect every aspect of the solid waste industry in West Virginia, from daily operation to routine monitoring. With an industry 15 years past the initiation of the new regulations, there have been no major environmental issues facing us to warrant such a change. Raising the regulatory bar even further in several areas than is required by our neighboring states or the EPA Subtitle D facilities, is, in our opinion, unjustified. The intent of the solid waste regulations enacted in 1988 have been satisfied and have been in force and functional for this period. To simply change the Rule to satisfy a change in agency operating philosophy or due to one isolated incident is not adequate justification.

As a general comment, we have made no effort in pointing out areas that present clerical or wording questions. We have no questions about changing the Department Head's title from "Director" to "Secretary." We do, however, have concerns about the expansion of the authority and sole discretion of the Secretary as it is written throughout the changes. We feel that little room is given in many circumstances for technological advancements or engineering innovation and design flexibility. We also believe that it was not the initial intent of the Rule to adversely limit the operators and engineers from developing environmentally sound alternatives to Rule requirements, but many of the proposed changes seem to be doing just that.

Specifically, our comments are as follows:

2.54 – The new language revises the definition of a groundwater monitoring well to a system, when by industry standard, a groundwater system refers to all the wells at a site that monitor one water bearing zone. This change also maintains that a groundwater monitoring system also

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SW & ERS SECTION

Mr. H. Michael Dorsey

Assistant Director

DIVISION OF WATER AND WASTE MANAGEMENT

July 25, 2003

Page 2

means "...a cluster of closely spaced wells...". When wells are closely spaced, they are monitoring different, vertically discrete, groundwater units; thus, this change in text will blur the line between different groundwater units.

3.8.d. Hydrologic Information – This section of the regulations has been completely revised, without we feel, the benefit of industry's input in the matter. While we agree that regulations require modifications to promote technologies and allow for corrections in existing language, the changes in this section are overly burdensome on existing and new sites and are not consistent with the progression of federal and other state guidelines/requirements.

Specifically, the new language requires that the surface of the saturated zone be monitored at 95% of sampling events. Given that it is standard industry practice to install a screen in a monitoring well at a location below the surface of the saturated zone, primarily to avoid dry well conditions and allow for seasonal fluctuations, we feel this minor addition to the language could have a huge financial impact on landfills now and in the future. Additionally, the new language requires that statistical testing be performed to determine whether the screened interval is high and deep enough to satisfy sections of the Rule. The language does not specify the method or provide any guidance on how the permittee is to perform the statistical analysis. We consider this requirement to be overly burdensome on the industry and suggest this language be removed from the rule. Consistent with federal and other state guidelines, all language in this section should be directed at determining the groundwater quality in the uppermost aquifer, not at specific locations within that aquifer.

3.8.d.1.G – The proposed language requires that the Secretary use best professional judgment to determine what interval must be screened in each well, and whether additional wells are needed.

We trust that the Secretary will not be designing the well systems, nor compensating the permittee if the Secretary specifies a screen interval that fails to meet the 95% confidence interval requirement. Therefore, we suggest the following language: "as follows: Secretary the permittee must use best professional ...".

3.8.d.1.G.4 – An unrepresentative sample appears to be a sample that does not include the water of the saturated surface. If a permittee installs three (3) closely spaced wells to form a system with varying screen intervals, only one of those wells is likely to yield a "representative" sample. Does this mean that only the representative sample needs to be analytically tested and reported statistically? If not, and all samples then become representative of the groundwater quality in the uppermost aquifer, then we would suggest that these changes are not consistent with the intent of federal and other state guidelines. Given the constituent make-up in municipal solid waste (MSW) landfill Leachate and its inherent ability to dissolve in solution, all three of the above wells would detect a potential release from the disposal area. Requiring that three (3) wells closely spaced together be installed to perform the same task is overly burdensome to the permittee and is not a practical requirement during detection monitoring for a MSW facility.

3.8.d.1.G.3 – This language suggests that it is practical to complete an extension or replacement of a well system within 90 days of discovery that the system yielded an unrepresentative sample.



Mr. H. Michael Dorsey

Assistant Director

DIVISION OF WATER AND WASTE MANAGEMENT

July 25, 2003

Page 3

We suggest that this language specify that the permittee submit an extension/replacement plan within 90 days of discovery. We know that regulators can get very busy at times and understand that approval must be granted prior to well installation. The permittee has too limited control of how long it takes to approve a plan to set a time frame on final project completion.

2.6 – This change adds a definition for an “Anomalous Event”. Please clarify further. Are there specific examples as to what would constitute an anomalous event? Under the proposed definition, we feel that a report could be required daily, given the large scope of possibilities which could be determined an anomalous event.

4.12.C – This rule change removes date specific language and adds language which allows the Secretary to specify the dates by which each landfill must submit particular documents. We suggest that these rules should specify the dates required for each submittal, so that the permittee can plan accordingly. Allowing the Secretary the ability to change/specify the dates from one submittal to the next will only lead to confusion, where a regulatory established date is clear and enforceable.

1.6 – Generally, dumpsters are rented by the property owner through a service provider. We suggest the following: “...any person other than its owner/renter.”

2.24 – Please clarify the new language “and not exceeding the height of the adjacent contour elevation.”

2.37 – The phrase “contaminated solid waste” appears twice in the new language. Please revise.

2.44 – Generally, the Downgradient Groundwater Quality is monitored as near the waste disposal boundary as practical. The additional language adds “or material or equipment that has contacted waste, is transported, maintained, treated, stored, or buried.” This additional language would appear to imply that facilities including access roads which may stretch far from the waste disposal boundary require groundwater monitoring. Please clarify since this is not typical industry practice and is likely to have significant impacts on existing facilities’ monitoring programs.

2.136 – Same comment as for 2.44. Please clarify.

3.27.d – Are all existing solid waste facility permits exempt from this provision?

4.5.b.1.A.2 – This rule modifies the design criteria for temporary stream channel diversions from a 10-year, 24-hour event to a 25-year, 24-hour event. Typical design standards for temporary measures such as stream channel diversion require that the channel be capable of passing the 2-year or 10-year storm event. By definition, these drainage structures are “temporary,” and therefore, do not warrant being designed for the 25-year event. Designing structures of a temporary nature to the proposed standards is impractical and unnecessary.



Mr. H. Michael Dorsey

Assistant Director

DIVISION OF WATER AND WASTE MANAGEMENT

July 25, 2003

Page 4

4.5.c.2.D, 4.5.c.2.F, and 4.5.c.2.G – These proposed changes will require that all drainage ditches, culverts and stream crossings associated with access roads be designed to pass the 25-year storm event. We would submit that this rule change is overly restrictive and rather than 25-year, 24-hour storm, we suggest that the minimum requirement for access road ditches and culverts be the 10-year, 24-hour storm event. Access roads to landfill sites are typically set in rural areas of West Virginia, far removed from the landfill's runoff and run-on control systems and the waste disposal unit. Designing the access road for the 10-year storm event is practical and will achieve a safe and reliable roadway design. We would also state that the proposed changes could result in significant cost increase to construct access ways, an increase that is not justified. The design of drainage structures is based upon the need and potential hazard of the situation. It is overkill in many landfill access road applications to provide drainage structures for the 25-year event.

4.5.d.4.A.5.(a) and 4.5.d.6.A.7.(j) – This new language apparently requires that leachate collection and detection pipes not within the bounds of a composite lined area be double walled pipe. We feel this change is unnecessary because there is no technical justification for such a significant cost increase and financial burden on industry or its customer. Generally, single walled transmission pipes, with proper construction techniques and quality control are more than adequate. A change of this nature will, at the very least, double the construction costs and are not applicable to all design situations. We suggest this language not be added to the rule.

4.5.f.3.B – This change eliminates the word “temporarily”, which apparently means that disturbed areas that may sit idle for more than 60 days cannot be temporarily revegetated. It is standard industry and regulatory practice to provide temporary revegetation to stabilize sediment producing areas on a short-term basis. The purpose of this is to reduce runoff and erosion, thereby reducing damages from sediment downstream of the area. Typically, temporary revegetation can be used in areas where no construction activity is anticipated for less than a year. Removing this language could mean that any disturbed area requires final revegetation, which is, most of the time, not the case. We suggest this language remain as it is in the current rule.

4.5.g.4 – This change removes the word “final” from the slope requirements of the landfill surface. It is our understanding of this rule change that once this language is in the Rule, that all slopes within the landfill disposal area will be required to meet this subsection of the Rule. We agree with the language as it exists today and would suggest no changes for this subsection.

This rule change does not contemplate intermediate slopes (i.e. constructed out slopes of waste and cover material in interior areas/cells to the final landfill design footprint), which is likely to have a huge financial impact on landfill operations while no environmental protection benefit is achieved. We have performed several slope stability analyses on waste fill slopes and have determined that waste slopes are stable with a factor of safety of 1.7 using 2.5H:1V slopes. Typically, an efficient landfill operator can construct waste slopes at ranges between 2.5:1 to 3:1 with runoff diversion benches provided as needed as an intermediate slope is developed.



Mr. H. Michael Dorsey

Assistant Director

DIVISION OF WATER AND WASTE MANAGEMENT

July 25, 2003

Page 5

We have studied the impact of requiring that all slopes be considered equal under the proposed changes and have determined that a facility will need to construct 1 to 1.5 additional acres of liner per 5 acre increment to address this change. This frankly drives up costs to the landfill and eventually the customers.

This rule change does not consider waste settlement during and after operations. Waste is likely to settle to almost 70% of its original height. This large decrease in final height decreases the final slope rate significantly.

To ignore cost, waste settlement and prudent engineering rationale and eliminate the word "final" from the language in the Rule is not justified. We suggest the language remain unchanged and would also recommend that language be added that will provide for intermediate/interior waste slopes to be a maximum 2.5H:1V slope ratio.

4.10.a.1.C. – Passive gas vents are typically constructed on final areas just before an impervious cap layer is installed to prevent lateral gas migration from the waste disposal unit. Given the new language proposed, a permitted will be installing passive gas vents on intermediate waste areas which are scheduled for additional waste placement. This is likely to damage the vent or for that matter, render it useless. Soon thereafter, other intermediate areas of the landfill will reach a point where they require passive gas vents be installed. This will inevitably become perpetual, gas vents being installed and then being damaged or broken.

The general intent of the gas vents is to prevent lateral migration of explosive gases. Without an impermeable cap placed above the waste, gas tends to move vertically toward the surface and vents through the more permeable daily and intermediate cover soils. This natural passive gas venting system does not require gas vents to operate sufficiently. The proposed rule change specifies that gas vents be installed during intermediate times within the landfill's operating period, which we consider of little benefit to the overall system at a significant cost to operators and customers.

4.11.a.3 – This proposed language is excessive for annual reporting (i.e. (1) vectors at one hundred (100) or more nodes of a rectangular orthogonal grid which spans all active and inactive disposal areas and all monitoring wells; ...) especially for landfill detection monitoring, when a landfill is not impacting groundwater; as determined through geochemical, statistical and hydrogeologic analyses.

4.12.b – This amended language requires that the Solid Waste Tonnage Report be received by the Secretary by the twentieth day of the following month. Given that the permittee has no control over the delivery of the report, we suggest this language remain the same (submitted to the Secretary by the 20th ...) as it currently exists in the Rule. If the current date of the 20th does not provide sufficient time for the Secretary to perform a review, then we suggest the submittal date be modified, not the received date.

4.12.b.1 – Please specify the number of copies to be submitted to each the SWMB and the PSC.



Mr. H. Michael Dorsey
Assistant Director
DIVISION OF WATER AND WASTE MANAGEMENT
July 25, 2003
Page 6

4.12.c – We feel this language could also suggest that the Secretary may change submittal dates of groundwater monitoring reports at any time. Reporting of this magnitude of course takes time to prepare and proper planning is of great importance to meet deadlines. As is consistent with other sections, (i.e. monthly tonnage reports, annual reports) please specify the date that groundwater monitoring reports must be submitted.

4.12.i and 4.13.a.3.B – Please clarify this new language by specifically addressing each of the required submittals and which media the Secretary expects to receive for each. The proposed language will only lead to confusion in the industry and will provide no increased level of environmental protection.

4.14.c.1 and 4.14.c.8 -

We propose that Section 4.14.b.1 Applicability should include the definition of an eligible free day participant as follows:

All commercial and public landfills...which a person, **who is defined as an “Eligible Free Day Participant” by meeting the following criteria: 1) does not have access to a commercial solid waste hauler; 2) does not have the ability to pay for service; and 3) is not in the business of hauling or disposing of solid waste, may dispose of...**

By including the definition of an Eligible Free Day Participant in the regulations, both the Eligible Participant and the disposal facility operator can know who qualifies for Free Day, and that it is not intended for all residents of West Virginia.

5.4.c.2. –

This section states, “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.” This location standard is in conflict with **Section 3.2.a.1.** which states, “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). It is clear that the intent of the Rule is that Construction/Demolition debris **can** be placed within 300 feet of surface water as long as it is not placed directly in the stream. Otherwise, there would be no need for Section 5.4.c.2.

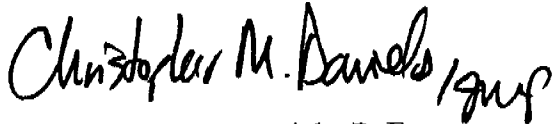
In closing, we trust our comments will be viewed constructively. Most of our comments are of a technical nature, and therefore there are several operational and economic factors that are not addressed in our comments. Due to the impact these proposed changes will have on the industry in West Virginia, we propose the formation of a committee comprised of representatives from the regulatory, operational and engineering arenas to consider the proposed Rule changes. This will enable a more balanced approach to addressing the concerns that led to the proposed changes in the first place. Alliance Consulting, Inc. appreciates the opportunity to provide these comments. If clarification is needed or if we can be of any assistance please feel free to contact us.



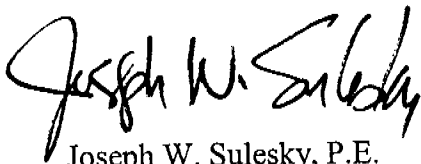
Mr. H. Michael Dorsey
Assistant Director
DIVISION OF WATER AND WASTE MANAGEMENT
July 25, 2003
Page 7

Respectfully submitted,

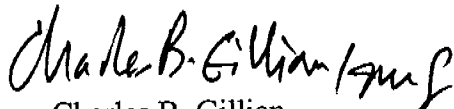
ALLIANCE CONSULTING, INC.



Christopher M. Daniels, P. E.
Project Manager



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Project Manager



Charles B. Gillian
Senior Vice-President/CFO

CMD/CBG:wmb

cc: Mr. Jerry Haynes, Mercer County Solid Waste Authority
Mr. James Allen, Raleigh County Solid Waste Authority
Ms. Doris Jarvis, Webster County Solid Waste Authority
Mr. Ron Levine, Waste Management, Inc.
Mr. Dean Lyle, Waste Management, Inc.
Mr. Scott Lambert, Waste Management, Inc.
Mr. Brian Card, Allied Waste Industries
Mr. Charlie Gillian, Allied Waste Industries
Mr. Jack Caffrey, McDowell County Economic Development Authority
Ms. Peggy Blevins, McDowell County Solid Waste Authority
Mr. John Wooton, Raleigh County Solid Waste Authority
Mr. John Tuckwiler, Greenbrier County Solid Waste Authority
Pocahontas County Solid Waste Authority
Delegate Robert Kiss
Senator Russ Weeks
Senator Walt Helmick
Mr. Gary Bledsoe, AWVSWA



Natalie

**McDowell County Solid Waste Authority
24 Elkhorn Street
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**Charlie Short, Chairman
Henry Paul, Board Member
Donald Hicks, Board Member**

**James Stafford, V-Chairman
Jerry Roncella, Board Member
Peggy Blevins, Office Manager**

WVDEP
1356 Hansford Street
Charleston, West Virginia 25301-1401
Att: Ann Howell

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JUL 23 2003

DEPT. OF ENVIRONMENTAL PROTECTION
SW & ERS SECTION

Dear Ms. Howell,

The McDowell County Solid Waste Authority (Authority) wishes to comment on the proposed Solid Waste Management Rule changes, with particular interest in the proposed changes to section 3.18.c.3C termination.

The Authority has made significant investment in acquiring property and obtaining a permitting a Municipal Solid Waste facility, (Permit No. SWL-5988) for the county.

Although the site has yet to be developed, some site development activity is scheduled for this fall. In either case, the proposed termination language presents a major obstacle for the Authority given the proposed stipulations and language. The Authority opposes the proposed changes and would strongly recommend the termination language be stricken from the proposed rule change in its entirety.

Certainly, there cannot be any significant environmental impact by removing the language, and since it only affects one facility, then we feel it is prejudicial and counterproductive to remove such an investment in the future for McDowell County. We offer no alternative language regarding the termination of a facility for simply not constructing it on the state's time manner.

Respectfully submitted,

Charles A. Short

Charles A. Short, Chairman
McDowell County SWA/pdb

cc: Gordon Lambert, MCC
Rachel Lester, MCEDA
Senator Walter Helmick
Delegate Emily Yeager
Delegate Richard Browning

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JUL 23 2003

DEPARTMENT OF ENVIRONMENTAL
PROTECTION

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JUL 28 2003

DEPT. OF ENVIRONMENTAL PROTECTION
SW & ERS SECTION

July 28, 2003

BY HAND DELIVERY

Mr. H. Michael Dorsey
Assistant Director of Division of Water and Waste Management
West Virginia Department of Environmental Protection
1356 Hansford Street
Charleston, West Virginia 25301

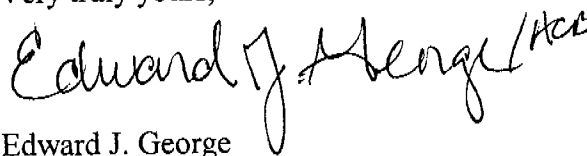
Re: Comments on the Proposed West Virginia Solid Waste
Management Rule, 33 CSR 1-1, *et seq.*

Dear Director Dorsey:

Please find enclosed herewith, the Comments of Northwestern Landfill, Inc.; S&S Grading, Inc.; Charleston Landfill, Inc.; Disposal Services, Inc.; LCS Services, Inc.; Meadowfill Landfill, Inc.; and Waste Management of West Virginia, Inc. (collectively "Waste Management") on the proposed Solid Waste Management Rule, 33 CSR 1-1, *et seq.* (the "Rule"). Waste Management is an integrated solid waste services company which operates throughout the State of West Virginia. As such, Waste Management believes that many of the proposed revisions to the Rule may have a profound impact on the solid waste industry in West Virginia. Specifically, Waste Management is most concerned that the proposed changes to Section 4.5.g.4, regarding the removal of the word "final" to slope requirements of landfill surfaces, would inflict million dollar costs to the solid waste companies and the citizens of the State of West Virginia. Therefore, Waste Management urges the agency to consider this impact, along with the impacts associated with the other proposed changes discussed herewith, and revise the Rule accordingly.

Waste Management appreciates this opportunity to submit comments on such an important regulation and hopes that the agency considers each in finalizing the Rule, which will impact not only the environment, but the citizens and the economy of the State of West Virginia.

Very truly yours,

A handwritten signature in black ink that reads "Edward J. George" with a stylized flourish at the end that includes the letters "HCB".

Edward J. George

Counsel for Northwestern Landfill, Inc.; S&S Grading, Inc.;
Charleston Landfill, Inc.; Disposal Services, Inc.; LCS
Services, Inc.; Meadowfill Landfill, Inc.; and Waste
Management of West Virginia, Inc.

**Comments of
NORTHWESTERN LANDFILL, INC.; S&S GRADING, INC.; CHARLESTON
LANDFILL, INC.; DISPOSAL SERVICES, INC.; LCS SERVICES, INC.;
MEADOWFILL LANDFILL, INC.; and
WASTE MANAGEMENT OF WEST VIRGINIA, INC.
Regarding the Proposed Modifications to the
WEST VIRGINIA SOLID WASTE MANAGEMENT RULE
33 C.S.R. 1 -1, *et seq.***

I. Introduction

On June 11, 2003, the West Virginia Department of Environmental Protection, Division of Water and Waste Management (“DEP”) filed notice of proposed modifications to the West Virginia Solid Waste Management Rule, 33 CSR 1-1, *et seq.* (the “Rule”). A public hearing was held on July 17, 2003 on the proposed revisions. Written comments on the proposed rule are due on or before July 28, 2003.

These comments are being submitted by and on behalf of Meadowfill Landfill, Inc.; Northwestern Landfill, Inc.; S&S Grading, Inc.; Charleston Landfill, Inc.; Disposal Services, Inc.; LCS Services, Inc.; and Waste Management of West Virginia, Inc. (collectively “Waste Management”), all of which are members of the Waste Management, Inc. family of companies. Waste Management is an integrated waste services company which is fully permitted by the DEP and authorized by the West Virginia Public Service Commission (“Commission”) to operate, among other things, municipal solid waste landfills, transfer stations, and solid waste collection and transportation services throughout West Virginia. Within West Virginia, Waste Management operates six (6) municipal solid waste landfills, one (1) transfer station, and is also authorized to conduct solid waste collection and transportation services throughout virtually the

entire State. The modifications to the Rule, as proposed, would have a significant impact on Waste Management's operations in West Virginia. As a member of the regulated community, Waste Management appreciates this opportunity to provide these comments to the DEP in the spirit of cooperation and in an endeavor to assist the agency in accomplishing the goals set forth in the Rule and its enacting statute, the West Virginia Solid Waste Management Act, West Virginia Code §22-15-1, et seq.

II. Comments

Waste Management respectfully requests that the DEP consider the following comments and recommendations for the specific sections of the Rule as outlined below:

1. 2.24 -- Class D Solid Waste Facility.

Waste Management supports the agency's proposal on the definition of Class D solid waste facility and encourages the adoption of this section.

2. 2.37 -- Construction and Demolition Waste.

Waste Management also supports the agency's proposed revisions to the definition of construction and demolition waste and recommends that the revisions be adopted.

3. 2.128 -- Staging Area.

This proposed definition would encompass even parked trucks or trailers and would impact areas where hauling companies park or store loaded trucks and trailers. In addition, landfills would be required to identify the location of staging areas on site in areas not designated for disposal. Waste Management recommends that the DEP adopt the following language to clarify the definition of "Staging Area":

a disposal area or stationary facility, excluding motor vehicles and trailers, where solid waste is stored, sorted and/or processed for transport to a solid waste facility. Staging areas are prohibited unless specifically approved or permitted by the Secretary.

4. **2.133 - - Transloading.**

Waste Management supports the DEP's proposed addition of the definition of transloading as it provides clarification to transloading and transfer stations which has, at times, been confusing. Waste Management suggests that this proposed definition be adopted.

5. **3.2g.3 - - Location standards for airport safety.**

It is not clear to Waste Management whether this proposed provision would apply to staging areas, transloading areas, transfer stations and others units. Waste Management recommends that the DEP clarify this proposed provision to state its applicability only to specific areas.

6. **3.2.o - - Location standards for air criteria.**

This proposed section also needs to be clarified in order to address whether ponds would be considered diversion structures, whether ditches that convey sediment water would be considered diversion structures, and whether there would be a distinction between diversion ditches to prevent run on and diversion ditches to contain run off. Waste Management recommends that the DEP revise this proposed section to clarify these issues.

7. **3.7.j - - Bonding and Financial Assurance.**

Waste Management understands that the DEP and the Commission have held meetings on this issue in order to explore how both agencies can conform their respective bonding and

financial assurance requirements in a uniform fashion. Waste Management supports the effort as it would result in easing the administrative burden of the agencies and remove any potential confusion as to sufficiency of bonding and financial assurance requirements. Waste Management suggests that escrow agreements submitted and filed with the Commission incorporate by specific reference the DEP bonding and financial assurance, thereby having this one (1) agreement satisfy this important requirement. Waste Management urges the DEP to revise this proposed section accordingly.

8. 3.8.d - - Hydrologic Information.

The proposed changes in this section would require groundwater wells to be sampled at portions of the uppermost aquifer including the "surface of the saturated zone" that is most likely to be affected by "contamination released from the landfill." Waste Management agrees that the detection monitoring well network should target the portion of the groundwater zone that allows detection at the earliest practicable time of a potential landfill release to the environment. However, Waste Management suggests that the following items be considered before determining where a screen interval should be for a monitoring well:

1. The best landfill indicator parameters include several of the volatile organic parameters and the most mobile inorganic indicators such as chloride, sodium, *et al.*, because when dissolved in groundwater they essentially move with groundwater via advective flow. Therefore, monitoring wells should be screened at an interval consistent with groundwater flow maps and vertical gradients, if any. Since a 20-foot well screen is an acceptable well

construction in West Virginia, wells are typically located in close proximity to the waste boundary, and the intake of a sampling pump can be positioned at different levels within the well screen to compensate for any vertical gradients, the appropriate portion of the groundwater zone can be effectively sampled to satisfy the objective of detecting a potential landfill release at the earliest practicable time.

2. Sampling groundwater at, or slightly below, the water table (i.e., within the upper 15 feet if a 20-foot well screen is used) will provide a representative sample for detection monitoring purposes since the effects of chemical diffusion and dispersion are discernible within this upper portion of the groundwater zone based on results from landfill monitoring programs performed by Waste Management across the country. Furthermore, the use of dedicated pumps and low-flow purging and sampling techniques can be used to target a specific portion of the screen interval to optimize the portion of the groundwater zone that is sampled as mentioned in item #1 above. This approach is very effective considering the majority of wells in a monitoring network are located in close proximity to the waste boundary.
3. The most appropriate monitoring location is not always at the water table surface. An example would be a setting where there are lower permeability materials at the water table (e.g., clays or other low permeability material), underlain by higher permeability material such as sand. In this case,

monitoring groundwater at the water table surface within lower permeability materials likely would not be an effective method to detect a release from the landfill at the earliest practicable time. Rather, the higher permeable material occurring below the water table surface would detect a potential landfill release at the earliest practicable time.

4. If groundwater conditions vary appreciably whereby the water level fluctuations are significant, the well being effected may require replacement. However, it may be reasonable to sample that well during periods when the screened interval is appropriately saturated. In addition, if a well becomes dry, it does not necessarily mean that well's screen placement is inadequate. Since the purpose of detection monitoring is to detect a potential landfill release at the earliest practicable time, monitoring a dry well (or well that may be dry some time of the year) that is properly located and screened within the hydrogeologic regime may be valuable to the monitoring program for its potential to yield water that can be sampled and analyzed. An example would be groundwater that is seasonally present in a coal layer. It is not uncommon to have coal layers that are saturated for six (6) to nine (9) months out of the year, but dry for the remainder of the year. Screening the well into the underlying clay horizon will not yield water during this dry season. Although perhaps a very effective monitoring location, this would not be allowed under the proposed changed rule because the requirement is to be saturated ninety -

five percent (95%) of the time. Therefore, the appropriateness of a well's screened interval should include the potential value of monitoring that well even if it has the potential to be dry, since its position in the hydrogeologic regime may still provide the detection of a potential landfill release at the earliest practicable time. These issues should be considered if the proposed requirement that "each monitoring system must yield representative samples at ninety-five percent (95%) of groundwater monitoring events" becomes part of the new rule.

5. The construction of well clusters in a detection-monitoring program should not be required unless these additional wells truly provide for early warning of a potential landfill release. Furthermore, the addition of unnecessary monitoring wells into the detection-monitoring program increases the number of statistical comparisons and will typically increase the site-wide false positive rate and decrease statistical power (See ASTM D6312-98). Both of these occurrences negatively impact the effectiveness of the statistical application to the detection-monitoring data and should be avoided as much as practicable.

In addition, while the earlier part of proposed Section 3.8.2 would imply some question as to the definition of the saturated zone in terms of perched and/or seasonal zones, the latter portion would require that the "saturated zone" be defined as a perennial (and probably a non-perched) horizon. The "surface of the saturated zone"

stated in the proposed Rule would not necessarily be compatible with the "uppermost aquifer" requirement, given the definition of the term "aquifer" in Section 2.9. Waste Management suggests that the DEP address this inconsistency and revise the proposed section accordingly. It is recommended that the "surface of the saturated zone" be clarified to apply to the uppermost aquifer only.

3.8.d.1

The proposed revision in this subparagraph would change the requirement for groundwater monitoring wells to groundwater monitoring *systems*. However, according to the definitions contained in the Rule at proposed section 2.54, a groundwater monitoring system may be comprised of one (1) well or a cluster of closely-spaced wells. Thus, this proposed amendment would have little to no impact for existing or planned facilities. In addition, the current rule requires, at the minimum, the installation of one (1) upgradient and three (3) downgradient wells, all monitoring the same aquifer. Although the wording would be changed, the same substantive minimum requirements would remain in effect under the proposed Rule. This would also be true of monitoring well(s) that represent "background" conditions. Although the text would be revised under the proposed Rule, the same general requirement would be maintained that upgradient wells are not absolutely required to be located hydraulically upgradient of the waste management area, if conditions (physical obstructions, questionability of representativeness of groundwater samples) preclude their drilling/installation in a truly upgradient location.

In this proposed section Waste Management suggests that "background" be the utilized

term rather than "upgradient" in order to be consistent with Section 3.8.d.1.c.1(a), which properly recognizes that upgradient well placement is not always possible or desirable. More importantly, Waste Management believes that the last two sentences of this proposed paragraph would disallow an intrawell monitoring approach, which is statistically more practical than an interwell approach because the influences of spatial variability is completely eliminated from the statistical comparison. Therefore, an intra-well statistical approach should always be encouraged (See ASTM D6312-98). In addition, Waste Management believes that the proposed requirement that "all monitoring systems must monitor the same aquifer" is inconsistent with the requirement that the "top of the saturated zone" be sampled in all cases unless the DEP clarifies that the top of the saturated zone only applies to the uppermost aquifer and not to a perched groundwater zone. As such, Waste Management recommends that the DEP revise this proposed language according to the comments hereinabove.

3.8.d.1.A

In this proposed section, Waste Management recommends replacing the phrase "...values of Phase I and Phase II parameters (listed in Appendix I and Appendix II) in groundwater samples are not affected" with "... representative samples of groundwater can be obtained for the purpose of establishing concentrations of Phase I and Phase II parameters". The phrase "in groundwater samples are not affected" is too subjective and would be difficult to qualify in many cases because field conditions change over time. Potential problems with sample results are typically determined in the field during sample collection procedures (e.g., high sample turbidity, deteriorating well-head construction, etc.) and during statistical analysis of the data. If

it is determined that the monitoring well is the cause of spurious sample results, the well should be addressed accordingly by the owner/operator (i.e., re-development, well replacement, etc.). Therefore, Waste Management suggests that the proposed phrase “in groundwater samples are not affected” be either deleted or qualified with the comments recommended above.

3.8.d.1.B

The detection monitoring well network should target the groundwater zone that provides detection of a potential landfill release at the earliest practicable time. As such, the following should be considered before determining the appropriate screen interval for monitoring wells:

1. The best landfill indicator parameters include several of the volatile organic parameters and the most mobile inorganic indicators such as chloride, sodium, *et al.* because when dissolved in groundwater they essentially move with groundwater via advective flow. Therefore, monitoring wells should be screened at an interval consistent with groundwater flow maps and vertical gradients, if any. Since a 20-foot well screen is an acceptable well construction in West Virginia, wells are typically located in close proximity to the waste boundary, and the intake of a sampling pump can be positioned at different levels within the well screen to compensate for any vertical gradients, the appropriate portion of the groundwater zone can be effectively sampled to satisfy the objective of detecting a potential landfill release at the earliest practicable time.
2. The construction of well clusters in a detection-monitoring program should not be required unless these additional wells truly provide for early warning of a potential landfill release. Furthermore, the addition of unnecessary monitoring wells into the

detection-monitoring program increases the number of statistical comparisons and will typically increase the site-wide false positive rate and decrease statistical power (See ASTM D6312-98). Both of these occurrences negatively impact the effectiveness of the statistical application to the detection-monitoring data and should be avoided as much as practicable. Additional salient points are made in our comments to Section 3.8.d. above.

3.8.d.1.C

The proposed requirement that monitoring systems allow detection "at the earliest practicable time" is not necessarily compatible with the "top of saturated zone" monitoring requirement. Where a more-permeable aquifer is unconfined beneath a waste area, but becomes confined or semi-confined in areas downgradient of the site, it may still be the most appropriate horizon for monitoring even if it does not represent the "top of the saturated zone." (See comments to Section 3.8.d., above.) Therefore, Waste Management recommends that the DEP revise the proposed language to allow for the appropriate monitoring requirements.

3.8.d.1.C.1

Waste Management suggests that this proposed section include a prelude stating "In instances where an upgradient versus downgradient interwell comparison monitoring is employed..."

3.8.d.1.C.1.(a)(1)-(2)

Waste Management recommends that the DEP delete the phrase "... of groundwater before it flows under the waste management area" and replace it with: "...of background groundwater at the downgradient point of compliance well(s) than are samples...." The primary

purpose of 3.8.d.1.C.1.(a)(2) is to be consistent with federal Subtitle D rules that allow a site to perform intra-well statistical comparisons where background is determined at each downgradient point of a compliance well (See Letter from United States Environmental Protection Agency to David M. Burt, April 3, 1996, attached herein as Exhibit A).

2.9/3.8.d/3.8.d.1.C.2

The proposed requirement that the "top of the saturated zone" be the focus of monitoring is at odds with the requirement that all wells monitor the same aquifer, given the definition of the term "aquifer" in Section 2.9. The proposed Rule needs to be made consistent as to focus and it is recommended that the "top of the saturated zone" be clarified to apply to the uppermost aquifer only. Therefore, Waste Management recommends that an intra-well comparison approach be regarded as "most preferred," which will eliminate any potential inter-well statistical application problems using upgradient wells that are not screened in the same uppermost aquifer, or within a different portion of the same aquifer as the downgradient wells (although provisions allowing interwell approaches should be maintained, to allow for different conditions from one site to another). With the acceptance or promotion of intra-well comparison approaches, there is less need for specification of "same aquifer" requirements.

In addition, Waste Management suggests that the relevant point of compliance be defined in proposed Section 3.8.d.1.C.2. Specifically, the relevant point of compliance is defined as "a point that is 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."

3.8.d.1.G.1-5

Waste Management believes that one of the more significant topics of the proposed amendments concerns the appropriateness of the screened interval installed within facility groundwater monitoring wells (Section 3.8.d.G.1-5). These subsections would require that statistical testing be performed each time the water level is determined not to be within the screened interval. The proposed Rule would also require reporting of this analysis, subsequent analysis and reporting of conditions of other wells, and extension or replacement of wells and documentation of these activities, if necessary. The timing of the reporting and remedial measures is also specified within these proposed subsections.

The proposed language would require a sample to be collected at the top of the saturated zone even though a sample collected at this interval would not necessarily provide a better detection - monitoring sample. Waste Management's experience has shown that sampling groundwater at, or slightly below, the water table (i.e., within the upper 15 feet if a 20-foot well screen is used) will provide a representative sample for detection monitoring purposes since the effects of chemical diffusion and dispersion are discernible within this upper portion of the groundwater zone based on results from landfill monitoring programs across the country. Furthermore, the use of dedicated pumps and low-flow purging and sampling techniques can be used to target a specific portion of the screen interval to optimize the portion of the groundwater zone that is sampled. This approach is very effective considering the majority of wells in a monitoring network are located in close proximity to the waste boundary.

In addition, the most appropriate monitoring location is not always at the water table surface. An example would be a setting where there are lower permeability materials at the

water table (e.g., clays or other low permeability material), underlain by higher permeability material such as sand. In this case, monitoring groundwater at the water table surface within lower permeability materials likely would not be an effective method to detect a release from the landfill at the earliest practicable time. Rather, the higher permeable material occurring below the water table surface would detect a potential landfill release at the earliest practicable time. Finally, if groundwater conditions vary appreciably whereby the water level fluctuations are significant, the well being effected may require replacement. However, it may be reasonable to sample that well during periods when the screened interval is appropriately saturated. In addition, if a well becomes dry, it does not necessarily mean that well's screen placement is inadequate. Since the purpose of detection monitoring is to detect a potential landfill release at the earliest practicable time, monitoring a dry well (or well that may be dry some time of the year) that is properly located and screened within the hydrogeologic regime may be valuable to the monitoring program for its potential to yield water that can be sampled and analyzed. Therefore, the appropriateness of a well's screened interval should include the potential value of monitoring that well even if it has the potential to be dry since its position in the hydrogeologic regime may still provide the detection of potential landfill release at the earliest practicable time.

Furthermore, the proposal requiring a statistical test to determine an appropriate screened interval would be problematic in application, since it is unclear how such a test would be performed. It would be more useful to perform an evaluation of the appropriateness of the screened interval for each sampling event based on the hydrogeologic regime, site-specific conditions (e.g., water levels, surface water control features, other construction features, etc),

and a review of published hydrogeologic information. Waste Management's experience has shown that such an evaluation would provide enough detail to determine whether the screen interval provides for early warning consistent with the intent of detection monitoring. Waste Management believes that a statistical analysis, as proposed by the agency, would not achieve this goal.

Waste Management suggests that if the screened interval is shown not to be appropriate (or the well is dry) after evaluations of available hydrogeologic information, the well should potentially be replaced before the next sampling event, considered an ineffective monitoring point and be abandoned, or retained as a wet/dry well depending on its location relative to the landfill and where it is screened. Waste Management recommends that this alternative evaluation be implemented in place of the DEP's proposed statistical analysis.

3.8.d.1.G.3

The proposed time frame for reporting (10 days beyond well replacement activities) is unreasonably short. Waste Management recommends that it be extended by at least another 35 days.

3.8.d.1.G.5

It is unclear to Waste Management as to why this proposed requirement is necessary. If each monitoring system is evaluated according to 3.8.d.1.G., why would it need to be evaluated again? More importantly, a dry well (or partially saturated well screen) does not necessarily mean that the well's screen placement is inadequate or that an additional well or wells would be required to meet the intent of detection monitoring. Since the purpose of detection monitoring is

to provide early warning of potential landfill release, monitoring a dry well or partially saturated well screen (or a well that may be dry some time of the year) that is properly located and screened within the hydrogeological regime would be valuable to the monitoring program for its potential to yield water that can be sampled and analyzed. Therefore, Waste Management's experience has shown that the appropriateness of a well's screened interval should include the potential value of monitoring that well - - even if it has the potential to be dry - - since its position in the hydrogeologic regime may still provide for early warning of a potential landfill release. Waste Management recommends that the above clarification be provided in the Rule.

9. 4.5.b.3 - - Sediment Control.

As large still ponds in West Virginia are disruptive and may increase mosquito larvae, Waste Management recommends that this proposed section be revised to allow a reduction of 0.125 acre-feet per acre of storage if a suitable best management practices plan is included with permit application and subject to approval by Secretary .

10. 4.5.c.2.D. and 4.5.c.2.F - - Drainage ditches and Culvert openings.

The provisions contained in these proposed sections are not clear as to whether the existing structures would have to be upgraded or whether existing permits would have to be redesigned. If the proposed requirements were to apply retrospectively, it could be economically detrimental to existing structures and could effect the performance of existing structures that were installed under approved regulations. Waste Management suggests that both of the proposed sections be prospective in application only and that the proposed language be revised to state as such.

11. 4.5.d.3.A.1 - - Sub base layer.

Waste Management recommends that the DEP change the proposed moisture requirement to a wet of optimum no greater than five (5) percent. Also, Waste Management recommends that the DEP allow a variance in an approved QAQC plan specific to the material in use that ensures permeability and structural integrity.

12. 4.5.d.4.A.(i) and 4.5.d.6.A.7.(j)

Waste Management suggests that the DEP revise these proposed sections to clarify whether temporary leachate detection and collection pipes would be exempt from dual containment and how existing structures are affected during construction and for a period of time after construction. In addition, pipelines which were installed within an approved waste disposal footprint should be exempt from this requirement. Finally, Waste Management recommends that the Secretary be allowed to grant a waiver if the pipelines were based on an adequate or equivalent design.

13. 4.5.g.4 - - Final Slopes.

The proposal to remove the word "final" from the slope requirements of the landfill surface would quite possibly be the most economically detrimental revision for the solid waste industry and the citizens of West Virginia, as the million dollar costs to the industry would be imposed on its customers. The proposed revision, in effect, would require all slopes to be graded equally, without consideration to intermediate slopes. The proposed Rule does not contemplate waste settlement during and after operations. Waste is likely to settle to almost seventy percent (70%) of its original height. As such, final slopes in landfills become flatter than constructed

slopes over the course of time due to the consolidation and decomposition of waste. Slopes constructed at 3 to 1 will actually change to 4 to 1 or less by time of final closure. Furthermore, air space and capacity can be lost and not recovered from facilities if slopes are kept to 3 to 1 when constructed.

In addition, the proposed revision are in direct contravention to technical analysis reports on the stability of waste fill slopes, which have determined that 2.5 to 1 waste slopes are stable and safe. Moreover, there would be no environmental benefit as a result of implementing the proposed rule. If all slopes were to be constructed at an equal grade, additional liner acreage would need to be constructed, which would be a significant cost to the landfill and, subsequently, greatly increase the costs to its customers. Waste Management recommends that the Rule allow the Secretary to consider other slope configurations based on stability analysis, consolidation studies, waste placement practices, leachate and gas management plans, and runoff calculations.

14. 4.10.a.1.C - - Passive gas vents.

Currently, passive gas vents are placed on final waste areas before an impervious cap layer is installed to prevent lateral migration of explosive gas. However, under the proposed revisions, the placement of passive gas vents would be on intermediate waste areas scheduled for additional waste placement. As such, under the proposed Rule, it is likely that the passive gas vents would become damaged or destroyed if installed in such a manner, requiring the replacement of the vents. In addition, the proposed requirement to install passive gas vents during intermediate times within the landfill's operating period would be unnecessary and a significant economic burden on the landfill operator. Therefore, Waste Management

recommends that the proposed section be deleted.

15. 4.11.a - - Groundwater Monitoring.

Pursuant to the proposed amendments, much less emphasis would be placed on “background” (replaced in the amended rule with “upgradient”) groundwater quality. Rather, pursuant to Section 4.11.a.5 (Evaluation of Data), “ the permittee must determine whether maximum contaminant levels (“MCLs”) have been exceeded for each parameter or constituent required in the particular groundwater monitoring program that applies to the facility”, to be determined at each monitoring event. Statistical analyses would be performed pursuant to the procedures of ASTM Standard D 6312-98, “Standard Guide for Developing Appropriate Statistical Approaches for Ground-Water Detection Monitoring Programs”. The comparison of the laboratory and statistical analytical data to the Phase I / Phase II (as appropriate) MCLs, as opposed to “background, would perhaps be the most potentially significant aspect of the proposed amendments to this section of the rule. Identifying detections above a MCL is reasonable. However, the MCL should not be used as a statistical limitation for the following reasons:

1. In those cases in which the upper normal prediction limit (“PL”) or combined-Shewhart CUSUM control limit (determined in accordance with ASTM D6312-98) are above the MCL, but the background data are all below the MCL, the DEP should not require that these background limits be manually set to an arbitrary limit at the MCL or below. The only statistical interpretation of such a decision rule is to treat this arbitrary “statistical” limit as a nonparametric PL. Unfortunately, the false positive rate of such a test will be

very high when using the typically small sample sizes that are encountered in routine intra-well detection monitoring programs. To ensure a reasonable site-wide false positive rate under such conditions would require a very large sample size (e.g., $n > 40$), and/or a large number of verification resamples, in which all but one of the resamples could be above the MCL and the site would still pass (i.e., not trigger assessment monitoring).

2. The MCL is a regulatory standard and not a statistically derived concentration based on background data. As such, using the MCL as a statistical limit is inconsistent with the rules for detection monitoring, which is the statistical comparison of future sample results to background.
3. If we are forced to use a standards based limit (i.e., MCL) for determining a potential ground-water impact instead of performing a statistical analysis as required in the regulations, we will potentially miss gradual releases that would be detected by the CUSUM portion of the control chart at levels below the MCL.
4. Comparison of individual measurements to a standard is not an application of detection monitoring statistics, which is required by the DEP regulations.
5. An owner operator is required to determine if there is a statistically significant increase over background. Proposing to compare the MCL to future monitoring results is compliant with the rule only if it can be described as a statistical method to determine a statistically significant increase from background. This approach is problematic because comparing individual detections to a standard is not a statistical method. Detection

monitoring rules also require us to determine if there has been a statistically significant change, which is not possible unless a robust re-sampling program is initiated (See No. 1, above.) Therefore, the owner operator would be forced into non-compliance with the rule.

6. If the detection-monitoring rule for statistics is not followed, the mechanism to enter assessment is unclear.
7. Using a standard based approach, it will be impossible to meet the provisions of the rule. Specifically, it will not be possible to determine if a statistically significant increase over background has occurred.

Waste Management is concerned about being forced into a position of non-compliance with specific provisions of the rule to meet the rather broad interpretive requirement to maintain detections below the MCL to be “protective of the environment”. A standards based approach could be used while maintaining compliance, however the impact on the quality of the statistical analysis is significant and should be considered carefully before this is required. Furthermore, the time and effort that will be required to satisfy the intent of the detection-monitoring rule (i.e., determining if there is a statistically significant increase over background) will be significant.

It is not clear how the proposed groundwater monitoring requirement would affect existing facilities. Would permit renewals have to meet new regulations? Would facilities have to meet new regulations immediately or would they have a time frame to upgrade? Waste Management suggests that the proposed requirements be applied prospectively only, not

retrospectively. As such, Waste Management suggests that the DEP revise the proposed section to clarify its prospective application.

In addition, Waste Management suggests that the following proposed subsections be revised by the DEP regarding groundwater monitoring requirements:

4.11.a.1

The term "background" is proposed to be replaced by "upgradient", but paragraph 3.8.d.1.c.1(a) provides for determining "upgradient" water quality from locations or waters that are not actually upgradient of the site. (See Letter from United States Environmental Protection Agency, Exhibit A). The term "background" would be more accurate, consistent, less confusing term and, therefore, Waste Management recommends that its usage be retained.

4.11.a.3

This proposed subparagraph would require the use of a computer flow model for each site, and the proposed stipulation regarding the number of grid nodes implies a numerical (as opposed to analytical) model. While numerical or analytical modeling can be useful and enlightening in assisting the investigator in understanding the hydrogeology of a site, it is inappropriate to consider the specific outputs of a computer model as a basis for determining regulatory compliance. A model is only as good as the input data (which can be significant) and the essential foundation is a proper hydrogeologic concept (or "conceptual model") of the site. The monitoring network must be designed in conformity with the conceptual hydrogeologic model, and to attempt to "fine-tune" precise well placements in an aquifer system (usually a fracture-flow system, in West Virginia) on the basis of specific flow lines drawn by a computer

graphics program is unrealistic and undesirable from all standpoints.

Furthermore, many, if not most, West Virginia landfill sites are not amenable to conventional numerical modeling because of site conditions (including topography, unsaturated flow, and fracture controls on flow). At the great majority of sites, the best and most appropriate "model" is a well-defined, well-understood conceptual model to which analytical solutions for flow may be applied. As such, the laborious procedure of attempting to "force-fit" the site hydrogeology into a complicated computer model is unwarranted and could result, at best, in only a "false sense of security" in the system design. Again, such computer modeling has valid applications in many circumstances in assisting the investigator's understanding of site characteristics. However, requiring such modeling as a specific basis for monitoring system design is inappropriate and undesirable. The computer - generated indications should never take the place of sound hydrogeologic reasoning. Finally, the application of a computer model at a landfill site would provide little added insight regarding appropriate well location or screened interval placement considering monitoring wells are typically positioned in close proximity to the waste boundary. Waste Management recommends that the DEP change the proposed language in Section 4.11.a.3 to "site-specific conceptual groundwater flow model". This would clarify the rule and eliminate confusion that the permittee must conduct numerical flow modeling at each landfill.

Waste Management believes that the proposed requirement of "vectors at one hundred (100) or more nodes of a regular orthogonal grid which spans all active and inactive disposal areas" is excessive. This language would require calculating the flow velocity along 100 flow

vectors, which would be a laborious process. Most monitoring systems are comprised of a limited number of wells and, therefore, the flow determinations are approximations based on professional judgment. Requiring this level of detail based on limited input data would be unnecessary and, as such, Waste Management recommends that this proposed requirement be deleted and replaced with best professional judgement to make flow determinations.

4.11.a.4.B

The proposed phrase “background upgradient water quality” is confusing in this proposed section. The intent of federal Subtitle D is to allow background to be established at downgradient locations for intra-well statistical analysis, since establishing upgradient background concentrations is not needed for this application. Therefore, background that is established at other locations not upgradient of the landfill is representative of background at that location, which is always more representative than “background upgradient water quality” when performing intra-well statistics by definition. As such, Waste Management recommends that the DEP revise this proposed section accordingly.

16. 4.11.c.2.G

Waste Management believes that the proposed addition to this section would allow the Secretary to simply deny a petition by ignoring it without a review. Waste Management suggests that this proposed section be deleted, as the previous sentence does not mandate that the denial be in writing, thereby making the proposed addition unnecessary.

17. 6.1.e.1.B - - Gas vents in closure.

This proposed requirement would best be managed based on age of waste, type of waste,

occurrence of leachate seeps, condition of vegetation, measurements of gas monitoring plan, waste placement procedures and design of final cap. Waste Management suggests that this proposed section be revised to allow the Secretary to waive one (1) gas vent per acre based on age and type of waste and site-specific gas management controls.

III. Conclusion

Waste Management appreciates the opportunity to provide comments to the DEP on the proposed revisions to the Rule and sincerely urges the DEP to take into consideration the comments and suggestions listed herein that would promote exceptional protection of the environment and sound solid waste management in West Virginia.

Respectfully submitted on July 28, 2003.

**Northwestern Landfill, Inc.; S&S Grading, Inc.;
Charleston Landfill, Inc.; Disposal Services, Inc.; LCS
Services, Inc.; Meadowfill Landfill, Inc.; and Waste
Management of West Virginia, Inc.**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Mr. David M. Burt, R.G.
Sanifill
155 North Redwood Drive, Suite 250
San Rafael, CA 94903

April 3, 1996

Dear Mr. Burt:

I am writing to clarify your question about a provision of the Subtitle D ground-water monitoring requirements. In particular, you asked whether background ground-water quality could be established at wells located hydraulically downgradient from the waste management area. You also inquired whether downgradient wells could be used in "intra-well" comparisons. As you know, the Municipal Solid Waste Disposal Criteria is a State run program. Many states currently have approved Municipal Solid Waste Landfill programs, and they are ultimately responsible for issuing permits and interpreting regulations. Since States can exercise more stringency in implementing the Federal standards, my response is conditioned upon a States adoption and interpretation of the following sections of the Federal criteria.

Section 258.51(a)(1) of 40 CFR states that background ground-water quality can be established at wells not located hydraulically upgradient from the waste management area where: 1) hydrogeologic conditions do not allow the owner or operator to determine what wells are hydraulically upgradient; or 2) sampling at other wells provides an indication of background ground-water quality that is as representative or more representative than that provided by the upgradient wells. Under both options, the wells used to establish background must represent the quality of background ground water that has not been affected by leakage from a unit. If this is the case, then the second condition may allow for wells located hydraulically downgradient from the waste management area to be used to establish background ground-water quality.

Allowing for background ground-water quality to be established at individual downgradient wells eliminates the component of spatial variability among background and downgradient wells selected for statistical comparisons. Future measurements collected from a downgradient well can be compared to its historic background measurements, setting up what EPA's statistical guidance refers to as an intra-well comparison.¹ Statistical tests often used for

¹ See for example, "Statistical Analysis of Ground-water Monitoring Data at RCRA Facilities--Interim Final Guidance," April 1989, page 7-1, (EPA/530-SW-89-026).

intra-well comparisons are control charts or prediction intervals.

I hope that this interpretation of the Subtitle D ground-water monitoring regulations helps clarify the requirements for you. You may contact me if you need further assistance.

Sincerely,



James R. Brown

cc: Robert Hall
Andrew Teplitzky
Howard Freeland, VADEQ

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JUL 28 2003

DEPT. OF ENVIRONMENTAL PROTECTION
SW & ERS SECTION

July 28, 2003

BY HAND DELIVERY

Mr. H. Michael Dorsey
Assistant Director of Division of Water and Waste Management
West Virginia Department of Environmental Protection
1356 Hansford Street
Charleston, West Virginia 25301

Re: Comments on the Proposed West Virginia Solid Waste
Management Rule, 33 CSR 1-1, *et seq.*

Dear Director Dorsey:

Please find enclosed herewith, the Comments of the West Virginia Manufacturers Association ("WVMA") on the proposed Solid Waste Management Rule, 33 CSR 1-1, *et seq.* (the "Rule"). The WVMA is comprised of manufacturing companies throughout the State of West Virginia which would be affected by the proposed changes to the Rule.

The WVMA is appreciative of this opportunity to submit its comments on the proposed Rule and hopes that the agency considers the recommendations and suggestions of the WVMA in finalizing its proposed revisions in order to promote a healthy environment and sound solid waste management in West Virginia.

Very truly yours,



Anne C. Blankenship
Counsel for the West Virginia Manufacturers Association

ACB

**Comments of the
THE WEST VIRGINIA MANUFACTURERS ASSOCIATION
on the Proposed Modifications to the
WEST VIRGINIA SOLID WASTE MANAGEMENT RULE
33 C.S.R. 1 -1, *et seq.***

I. Introduction

On June 11, 2003, the West Virginia Department of Environmental Protection, Division of Water and Waste Management ("DEP") filed notice of its proposed modifications to the West Virginia Solid Waste Management Rule, 33 CSR 1 et seq. ("Rule"). A public hearing was held on July 17, 2003 on the proposed revisions. The written comment period closes on July 28, 2003.

These comments are being submitted by and on behalf of the West Virginia Manufacturers Association ("WVMA"). The WVMA is comprised of small, medium and large manufacturing companies located throughout the State of West Virginia and is devoted to the advancement of industrial manufacturing activities and related businesses in West Virginia, while maintaining a solid respect for sound environmental protection. The WVMA frequently offers comments on rules and regulations that are of interest to its members. The proposed revisions to the Rule would affect WVMA members which own or operate restricted use and Class F Private Industrial Solid Waste Facilities. Accordingly, the WVMA submits the following comments.

II. General Comments

Under the current rule, Class F solid waste facilities are not subject to the same pre-siting requirements as commercial solid waste facilities. However, the DEP has proposed that Class F solid waste facilities be subject to those same pre-siting requirements at the discretion of the Secretary.

Class F facilities are private facilities which generate and dispose of their own solid waste. This is, by its very nature, strikingly different than commercial solid waste facilities which accept for disposal mixed wastes from sources other than themselves. As Class F solid waste facilities dispose of their own waste, the wastestream is much more consistent than that sent to commercial facilities. In addition, the Class F facilities regulate what and how much solid waste is being disposed of at their own facilities and, Class F facilities do not involve the kind of vehicle traffic that is associated with commercial sites. In other words, Class F facilities have considerably more control over the amounts and types of wastes disposed of at their facilities than commercial solid waste facilities. Furthermore, Class F solid waste facilities are already located in areas dedicated to or zoned by local ordinances as industrial. As such, there is no need for pre-siting notice and approvals. The basic location standards already present in the rules are sufficient for such facilities.

The proposed rule may also arguably be read to include pre-siting requirements for existing Class F solid waste facilities. If so, all existing industrial solid waste facilities would have to adhere to the pre-siting provisions currently only required for commercial solid waste facilities, including providing notice, legal publication and holding a public hearing on the pre-siting notice in the area potentially affected. This requirement is unnecessary, as the Class F facilities are already located in areas used for or zoned for industry. As such, WVMA strongly recommends that the DEP retain the term "commercial" where it has proposed deleting the term in various provisions of the rule which currently only apply to commercial solid waste facilities.

III. Specific Comments

1. 1.6.a

This proposed new subsection would prohibit any placement of solid waste into or on any land or water “so that such solid waste or any constituent thereof may enter the environment or be admitted into the air or discharged into any waters, including groundwaters,” unless authorized by a permit from the DEP. This language goes beyond the permit requirement of the Solid Waste Management Act, West Virginia Code §22-15-1, et seq., and exceeds the rule-making authority of DEP. The permitting requirements of West Virginia Code §22-15-10(b) require a permit for the following action: “To install, establish, construct, modify, operate or abandon any solid waste facilities.” Proposed Section 1.6.a applies a much broader permit requirement and, therefore, the WVMA recommends that it be deleted from the proposed Rule.

In addition, the new language to be inserted in Section 1.6 would require anyone who sends solid waste to a permitted solid waste disposal facility to assure that facility is in compliance with the Act or they, too, would be in violation of the Solid Waste Management Act. Such burden being placed on individual users of solid waste facilities is unreasonable. Compliance assurance is the responsibility of the owner/operator of the permitted facility. As such, the WVMA also recommends that this language be deleted from the proposed Rule.

2. 1.6.c

The DEP proposes to add this subsection, which states that only owners of dumpsters can place solid waste in these containers. In many instances, the dumpster is owned by the solid waste management facility which collects solid waste that is placed in the dumpster by a third-party, including the positioning of “green boxes” in rural areas which are accessible to the public. The

proposed language would prohibit such an arrangement. The cross-reference to West Virginia Code §20-7-27 also appears inappropriate as this section relates to prison inmate programs regarding litter pick-up and removal. In addition, the enforcement of the litter control laws under Article 7 of Chapter 20 is assigned to the Division of Natural Resources. It is not appropriate to include a requirement in a DEP rule which relates to the enforcement of a requirement under a program that is within the jurisdiction of the Division of Natural Resources. The WVMA recommends that this proposed section be deleted.

3. 2.24 - - Class D Solid Waste Facility.

The WVMA recommends that the current language “beneficial reuse of clean waste concrete/masonry substances for the purpose of structural fill or roadbase material” be retained in the proposed definition. Concrete/masonry substances are excellent materials for use in structural fills and roadbases and do not pose leachate problems. Their reuse should be encouraged. Inspection/enforcement (“I/E”) staff need a clear directive that such use of these materials is exempt from a Class D permit.

4. 2.37 - - Construction and Demolition Waste.

The proposed definition of construction and demolition (“C&D”) waste should be modified to include the following language: “packaging for new windows, doors, and shingles, trash from construction workers’ lunches (fast food bags, sandwich bags, lunch bags, sandwich wraps, soda pop cans, milk cartons, etc.) and other debris generated at a construction or demolition site and typically associated with construction/remodeling.” The WVMA recommends this specific language as this type of debris is typically associated with C&D activities which, in many instances, results in the agency taking action against the regulated entity even though this type of site-related debris does not

cause environmental harm. By including this additional language, the agency's time and resources will be saved by not having to address this non-issue.

5. 2.7 - - Applicant.

The proposed change to the definition of "applicant" is not appropriate. In those instances where it is deemed necessary to have "applicant" apply to persons related by virtue of "family relationships" those provisions should be specifically addressed in the appropriate section of the regulations, and not in the definition of applicant. Where an expanded scope of the term is intended, specific language should be included in that specific provision of the regulation. The expanded definition is only appropriate for commercial applicants. See W.Va. Code §22-15-2(2).

6. 3.1 - - Permitting Requirements.

Although only minor changes are proposed for this section, it is clear that this section requires compliance with laws other than the Solid Waste Management Act. Including these requirements in the Rule not only results in regulatory duplication, it also raises the potential for inconsistent application of these statutes or rules depending on whether they are being implemented through a solid waste management permit, or an other permit. It is therefore recommended that these subsections be revised to reference only the Solid Waste Management Act and the State Water Pollution Control Act.

7. 3.2.o - - Setback Standards.

Access roads, as well as surface diversions, should be allowed within fifty (50) feet of the property line. The WVMA suggests that the last sentence be revised to read: "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 access roads) and all adjacent property

lines.” In addition, because of the significant impact this would have on existing facilities that may not meet the buffer zone requirements, the WVMA suggests that this section be clarified to state that the requirements would only apply to the installation of new solid waste management facilities.

8. 3.4 - - Pre-Siting Requirements.

The WVMA urges the DEP to retain the word “commercial” in this section. As stated previously herein, a non-commercial solid waste facility should not have to publish a Class II legal advertisement, file a pre-siting notice with the DEP, etc. when the DEP is investigating an area for a solid waste facility. If the DEP decides to permit a solid waste facility, there will be ample opportunity for public involvement and comment in the permit application issuance and process.

9. 3.7.j - - Bonding and Financial Assurance.

The wording “and any requirements of the West Virginia Public Service Commission” should be deleted as the provisions in the Rule are completely different from the limited jurisdiction the Legislature has granted to the Public Service Commission with regard to landfill regulations.

10. 3.8.d - - Hydrologic Information.

The last sentence in this proposed section which states: “Each monitoring system must yield representative samples at ninety-five percent (95%) of groundwater monitoring events.” should be clarified to address how many sampling events must occur before the ninety-five percent requirement would become applicable. For example, in the hypothetical situation where four groundwater monitoring wells were installed in the Spring of year one, then a drought began that summer and lasted until the end of year two, it may be found that the upgradient well is dry when the second quarter sampling in year two occurs. At this time, only five sampling events have occurred (three from year one and two from year two). Therefore, a representative sample has been obtained four

out of five times, or 80 percent, which is less than 95 percent. The WVMA recommends that a minimum of 20 sampling events occur prior to the 95 percent requirement being applicable.

11. 3.8.d.1 - 3.8.d.1.F.2(a)

These proposed sections update the current monitoring well installation and sampling interval language. In general, WVMA believes that the proposed revisions are logical and are an improvement to the current provisions.

12. 3.8.d.1.G - 3.8.d.1.G.5

Due to high precipitation and infiltration, when a monitoring well ("monitoring system") water level changes to above the top of the screened interval so that a representative sample of the top of the aquifer is not collected, an extensive statistical evaluation is required to determine whether the existing screened interval is sufficient to allow an appropriate sample collection of the uppermost significant aquifer. The suggested language would require such a study to be completed each time there is such an occurrence. The proposed language would also require that if one monitoring well shows the potential that the water level is above the screened interval, each well in the landfill must be statistically evaluated to determine if remedial action is required.

Most landfill monitoring wells have stable water levels that do not change by more than a few inches due to precipitation variability. However, there are a few upgradient wells drilled at the top of a "valley fill" landfill that monitor fracture systems that are prone to have water levels that do change substantially. The same can occur within the downgradient wells. There are also landfills in the Karst region of West Virginia where static water levels may change many feet each quarter. If the initial well design has taken this into consideration, perhaps there will be no problem. The WVMA's objection to this portion of the proposed change is the language "each time" and

“evaluation of all wells in the landfill.” Additionally, the WVMA is concerned how a statistical analysis would be performed to determine such information when there is little data to statistically analyze. If a well is shown, in more than one instance, to exhibit that its screened interval is incorrect during normal precipitation intervals, then it should be replaced. An extensive and expensive statistical study is unnecessary to reveal such a condition. As such, the WVMA recommends that the DEP revise these proposed sections in accordance with these comments.

13. 3.14.b.3 - - Additional Costs.

Here, the DEP has proposed that the applicant pay additional costs above and beyond the non-refundable background investigation fee. The WVMA recommends that there be either a maximum dollar limit or a consensus between the DEP and the applicant as to the scope of additional background investigation required once the initial non-refundable fee amount is reached. The WVMA also questions whether such fees are authorized by statute. Background investigations also only apply to commercial permit applicants, by statute.

14. 3.16.e.2 - - Exemptions.

The WVMA urges that this section be clarified to address whether the proposed provision allows for an exemption when a developer has set aside a stump disposal area in a new subdivision for common use by the individual lot owners when they clear and grub their property prior to starting construction on their house:

15. 4.5.d.6.A.7.(j)

The WVMA believes that the intent of the DEP in this proposed section is to apply the requirement to leachate “collection” pipes rather than leachate “detection” pipes. As such, the proposed language should be revised accordingly.

16. 4.5.d.5.A.9 - - Liner System Composite Liner.

This proposed section, which would allow for the substitution of three (3) feet of compacted soil with a permeability of 1×10^{-6} cm/sec in lieu of 2 feet of 1×10^{-7} cm/sec of compacted soil, is technically sound and would be beneficial in some areas of the State.

17. 4.11.a.3 - - Groundwater Monitoring.

Proposed section 4.11.a.3 would require "at least annually" the determination of groundwater flow rate and direction of the "uppermost significant aquifer", which has been a requirement for many years. The method to accomplish the requirement has been to use a slug test of one of the wells to determine flow rate, and contouring well static water levels to show flow directions. Regulators have previously indicated that the reported data is generally unused. The regulation would change the required groundwater flow characterization of the uppermost significant aquifer that must be accomplished using computer modeling. In addition, the DEP has proposed the number of locational nodes (minimum 100), and vector descriptions to be used. All variables must be described, all calculations reported, and assumptions outlined.

This type of study requires special modeling software, is time-consuming, difficult, and expensive. In addition, the data gathering can be extensive, requiring much field time, and derivation of aquifer permeability and porosity for each monitoring well. Slug tests must be performed for each well and can be time-consuming. Furthermore, there is no obvious justification for the proposed requirement to provide separate maps for flow rate and flow direction estimates. The major problem is whether sufficient data can be collected to generate a reasonably representative model. Most landfills utilize a minimum number of monitoring wells (often only four), usually located along the perimeter of the landfill. The model generated would be based on minimal data

points spread over, at least, 100 data reporting nodes. The generated vectors would be based on poorly-spaced data. The value of the model would, at best, be questionable.

The WVMA also questions how the data would be utilized. What advantage is there for generating such data? Unless the plan is to require relocation of the monitoring system, there could be little improvement in sampling method and the monitoring wells would be unchanged for future sampling events. There is little protection advantage to the landfill, or the regulatory agency. The groundwater will flow in the same general direction at the same general rate, depending on precipitation variables. Having an annual model of the specified complexity is of minimal environmental value. Therefore, WVMA recommends that the DEP reconsider this proposed section and revise it to address these issues.

18. 4.11.a.5.A - - Evaluation of Data.

This proposal requires permittees to determine whether “maximum contaminant levels” have been exceeded for each constituent identified in the groundwater monitoring program that applies to the facility. The term “maximum contaminant level” is not defined in the rule. The WVMA recommends that the proposed Rule be revised to clarify this term.

19. 4.11.a.5.D - -

Under this proposed section, the Secretary is allowed to establish alternative sampling and statistical testing procedures when consistent with sound professional practice and “the intent of this rule.” It is not clear how the intent of the Rule is to be determined. The WVMA recommends that the Rule be revised to refer to “good engineering and testing practices.”

20. 4.11.b.4

In this provision, the DEP has proposed that “unless otherwise directed by the Secretary”

if a statistically significant increase (only one parameter is necessary) would occur following verification sampling during a quarterly monitoring well sampling event and statistical analysis, the landfill must establish a Phase II assessment program that includes annual assessment thereafter. A Phase II assessment includes completing a sampling protocol of 214 parameters in addition to the Phase I list of 93 parameters. Section 4.11c.2.B indicates the Phase II sampling must be completed for each well.

The language of the proposed regulation reads as if a single statistically significant increase of a single parameter in a single well could trigger initiation of a very expensive Phase II sampling event on every well initially and every well annually thereafter. What is the logic of requiring an extensive secondary sampling list for a "hit" of a parameter from another parameter list? The WVMA recommends that the DEP revise this section accordingly to limit the initial test and provide a limit on followup annual testing. In addition, the cross-reference to Section 3.8.d.1.J is no longer correct. As such, the WVMA suggests that other cross-references in the rule be verified as well.

21. 4.11.c.2.G - - Phase II Assessment Monitoring Program.

The proposed rule provides that after petitioning for reinstatement for Phase I monitoring if the Secretary does not respond in writing within ninety (90) days, the petition will be deemed denied. Such a negative default provision endorses inertia, or even neglect on the part of the agency. To encourage undue delay in the review of such petitions, the WVMA recommends that the last sentence in this subsection be revised by replacing the word "denied" with the word "approved."

22. 4.11.h - - Groundwater Monitoring Report

Here, the WVMA suggests that the language "or the owner's office" be added to the proposed section to allow a copy of the report to be kept on file at the owner's office or at the solid

waste facility.

III. CONCLUSION

The WVMA appreciates this opportunity to comment on the proposed Rule, and hopes its comments will be given full consideration by the DEP.

Respectfully submitted on July 28, 2003.

West Virginia Manufacturers Association

cc: Karen S. Price, President
West Virginia Manufacturers Association
2001 Quarrier Street
Charleston, West Virginia 25311

Members, WVMA Waste Team

Sudh...

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RECEIVED

July 23, 2003

Ms. Anne Howell
Office of Solid Waste
West Virginia Department of Environmental Protection
1356 Hansford Street
Charleston, WV 25301-1401

JUL 29 2003
DEPT. OF ENVIRONMENTAL PROTECTION
SW & E R S SECTION

RE: Proposed Amendment to Legislative Rule 33 – “Solid Waste Management Rule”

Dear Ms. Howell:

Proposed 3.18.c.3.C states: “Termination. – A solid waste facility permit may be terminated by the Secretary for any of the following reasons: 3.18.c.3.C.1 Failure of the Permittee to initiate construction of the permitted facility within 180 days of permit issuance, provided that a permittee notified by the Secretary of pending termination, may request and be granted an extension of time to initiate construction by providing information that demonstrates that all construction will be initiated within the remaining portion of the permit life: or –“.

Our organization in concert with the County Commission, County Solid Waste Authority, Office of Abandoned Mined Reclamation of DEP, and others have been working in concert to effect a Municipal Solid Waste Landfill at the site for Permit Number SWF-1033-98/WV0109568. Administratively we are moving forward and the attached “DRAFT – 5/3/03” summarizes actions toward the establishment a of viable solid waste landfill. An operating landfill is an essential element in our economic development program.

We feel the above clause(s) are somewhat threatening to our opportunity for moving forward. Might you consider elimination or modification? It would appear, a time certain period for the construction of a facility would be more easily managed with necessary caveats for extension(s).

Your consideration is appreciated!

Respectfully,

Rachel Lester

Rachel Lester
Executive Director

cc: County Commissioners
County Solid Waste Authority
Senator Truman Chafin
Senator John Pat Fanning
Delegate Richard Browning
Delegate Rick Staton
Delegate Harry Keith White
Emily Yeager

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JUL 29 2003

DEPARTMENT OF ENVIRONMENTAL
PROTECTION

**McDOWELL COUNTY ECONOMIC
DEVELOPMENT AUTHORITY**
9 Bank Street
Welch, WV 24801

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JUL 27 2003

DEPARTMENT OF ENVIRONMENTAL
PROTECTION

Phone: (304) 436-3833

Fax: (304) 436-6041

E-mail: mceda@citlink.net

DRAFT – 5/3/03

SHANNON BRANCH ENVIRONMENTAL RESTORATION PROJECT

AND

ESTABLISHMENT OF “FOOTPRINT” FOR A SOLID WASTE LANDFILL

On February 9, 1998, the McDowell County Commission purchased about 6,300 acres of surface land in the vicinity of Welch. Included in the acquisition is a refuse pile (refuse) on Lower Shannon Branch that in 1996 had been deemed eligible for environmental restoration through funding from the Office of Abandoned Mine Lands and Reclamation (OAMLR), part of the State's Department of Environmental Protection (DEP).

Concurrent with the County's efforts to secure rights to the property, the Commission, in concert with the County's Solid Waste Authority, were in the process of securing a Solid Waste Landfill Permit within the confines of the 6,300 acres and in the Lower Shannon Branch watershed. The Solid Waste Landfill Permit application included the possible use of mine refuse for the establishment of the Landfill's footprint and subsequent cover material. DEP's Office of Waste Management issued Solid Waste Permit Number SWF-1033-98/WV0109568 on March 12, 1998.

Discussions have been ongoing between the County and OAMLR on a synergistic program amongst various entities to effect OAMLR's environmental restoration mandate at the least possible cost and enhance the County's opportunity to advance economic development. The discussions have culminated in a Memorandum of Understanding (MOU) between DEP and the McDowell County's Economic Development Authority (McEDA). The McEDA has affinity with the County Commission as outlined in the code of West Virginia – Article 12 Sections 7-12-1 through 7-12-16 (County & Municipal Development).

The essence of the MOU obligates the McEDA to effect, within OAMLR's protocol, the environmental restoration of the refuse and its environs. The OAMLR will provide \$1.2 million exclusively for the environmental restoration of the refuse. The \$1.2 million is 80% of their estimated cost of \$1.7 million to effect the clean-up. The \$1.7 million was arrived at by OAML by review of their many successfully completed projects. OAMLR's consulting engineering group estimated the reclamation cost to be in the range of \$2.1 million.

There is an estimated 1,800,000 tons of refuse and of that amount, about 400,000 tons is marketable coal based on 20% recovery. Samples of the refuse show the 20% recovery to be conservative. McEDA planned modus operandi for effecting the environmental restoration is to reprocess the refuse pile to gain a marketable product and

use the waste from the reprocessing operation for the establishment of the Landfill's footprint. McEDA's pro forma for the refuse reprocessing anticipates a coal market at \$23.00 per ton FOB Lower Shannon and an operating cost slightly under \$21.00 per ton. The operating cost presumes a royalty payment to the County via an arms length lease agreement of \$1.00 per ton, performance bond carrying cost of \$_____ per ton and tax payments (Black Lung, OSM, Severance) of \$2.50 per ton. Daily coal production is projected at 600 tons per day at a _____% Sulfur, _____ BTU, _____% ash, _____% moisture, and _____ BTU MAF.

Specific plans for environmental restoration will be subject to OAMLR's approval and their payments, after a mobilization payment, will be on an incrementally restored acreage basis. The reprocessing operation's waste disposal site will be within the area permitted for the Landfill and consistent with the requirements of the Landfill Permit. Use of the reprocessing waste and construction of proper environmental controls for its disposal will effect an estimated \$1.5 million savings in the Landfill's ultimate construction cost, projected to be \$3.5 million.

For the projects' advancement, the McEDA has retained the services of Alliance Consulting, the successor organization that assisted the County and Solid Waste Authority in the procurement of the Landfill Permit. Alliance will be used to develop detailed plans, project management and contract administration. The McEDA plans to retain a "Reprocessing Consultant" to advise and oversee the reprocessing operation. The selected "Reprocessing Consultant" will be required to have a proven track record in refuse pile reprocessing and product marketing. It is anticipated that remuneration of the "Reprocessing Consultant" would include a base compensation for plant management (2) and shift supervision (2), with an incentive based on quantity, quality, operating cost and selling price. Other contracts to be bid include mobile equipment, preventive maintenance & repairs, off-road diesel fuel, coal refuse reprocessing plant, construction materials, and hydro-seeding. Work force will be McEDA employees.

The reprocessing phase of the project although conducted concurrently, will operate as an independent financially self-sustaining operation. The OAMLR has expressed reservations regarding the economic viability of the refuse reprocessing and they will require a performance bond or equivalent of \$1.7 million, their estimated cost for the environmental restoration.

The McEDA will be required to secure financing since cash flow projections are such to indicate a cash deficiency for the first 8 to 9 months of operation. In addition to the performance bond requirement, a loan of \$_____ is projected. Conversation advice is that the Black Lung, OSM and Severance Taxes will be waived but confirmation has yet to be obtained.

In summary the project will benefit the State and County by having the environmental restoration accomplished at a significant cost savings, estimated to be \$500,000.00; putting an estimated \$400,000.00 for the County Commission to expend for the good of the County; provide a giant step for providing a solid waste landfill necessary for economic development in the County; and provide jobs over a three year period for about 20 people in the County.

5/3/03

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JUL 25 2003

DEPARTMENT OF ENVIRONMENTAL
PROTECTION

FAX

Harrison County Solid Waste Authority
301 West Main Street, Suite 505
Clarksburg, West Virginia 26301

Phone 624-8715/ Fax 624-8723
www.harrisoncountysolidwaste.com

To: WV Department of Environmental Protection
Division of Water and Waste Management
Mr. Michael Dorsey, Assistant Director
1356 Hansford Street,
Charleston, WV 25301

Date: July 28, 2003

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Ref: 33CSR 1 "Solid Waste Management Rule."

JUL 28 2003

Dear Mr. Dorsey:

DEPT. OF ENVIRONMENTAL PROTECTION
SW & ERS SECTION

On behalf of the Harrison county Solid waste Authority, I would like to submit the following comments and concerns for your consideration during this now extended public comment period for this state rule:

- Under 33-1-1 and the violation for disposing of solid waste in a dumpster belonging to others. This may be an error to the reference, I believe that is a violation of § 61-3-53 not § 20-7-27.
- Under 33-1-2 and the definition of "Bulky Goods." A recent order by the Public Service Commission to the Motor Carrier Rules now includes waste tires off the rims as "Bulky Goods" and other changes intended to eliminate the illegal disposal of oversized items.
- Under 33-1-4 and the definition of acceptable waste disposal in a landfill, we would ask for a ruling on the acceptance of automobile fuel tanks in a landfill and how to prepare a fuel tank for acceptance in a landfill. If an automobile fuel tank needs to be emptied and crushed, can it be done safely by an individual without the use of heavy equipment or a compactor? Automotive recyclers are telling us that they can no longer accept fuel tanks either on or off the vehicle.
- Also under 33-1-4 and the definition of residential solid waste for Monthly Free Disposal, we would ask for clarification on the disposal of tires. Waste haulers will soon be required to include waste tires during their customers monthly bulky good pickup per the recent PSC order. Can tires be excluded from Monthly Free Disposal by those eligible for the Free Day disposal?
- Finally, the legislative mandate of Monthly Free Disposal is a contemptuous issue across the state and no doubt worthy of further review. But, as much as many landfill operators may want Free Disposal phased out and eliminated, mandatory collection and payment will deserve further consideration before any changes are made to free day.

We currently have thousands of occupied dwellings that do not subscribe for garbage collection, or their service is now cutoff for nonpayment. Garbage will continue to be left at the curbside/roadside as the tipping fees must be submitted for all trash collected and delivered to the landfill by the waste haulers.

Paul E. Hamrick, Director



July 23, 2003

Mr. Michael Dorsey
Assistant Chief
Solid Waste Management Section
Department of Environmental Protection
Division of Water & Waste Management
1356 Hansford Street
Charleston, WV 25301

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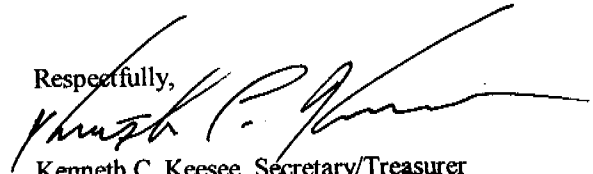
DEPT. OF ENVIRONMENTAL PROTECTION
SW & ERS SECTION

Re: Proposed Regulation Changes -- (33CSR1 -- Title 33 Legislative Rule)

Dear Mr. Dorsey:

1. We, the Greenbrier County Solid Waste Authority, fear that the proposed Title 33 Legislative Rule changes will create undue financial hardships that will have the effect of eventually eliminating all of the smaller, rural landfills in West Virginia
2. The Greenbrier County Solid Waste Authority fears that the rule changes will also create financial hardships on the consumers in West Virginia through inevitable rate increases made necessary by these changes. This is especially troubling when considering the percentage of aging population in West Virginia on fixed incomes.
3. The proposed rule changes are out of bounds for ordinary sanitary landfills. The proposed rule changes appear to be more suited to toxic, hazardous waste disposal sites.
4. The discretionary powers of the Secretary would be unnecessarily broadened through these rule changes. This gives very uncertain guidelines for future solid waste management infrastructure development and for the financial planning and arrangements necessary for those developments.
5. The extensive proposed groundwater monitoring changes will unnecessarily greatly increase financial obligations while obtaining a minimum of additional data for evaluations and questionable results for groundwater protection.

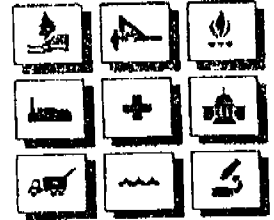
Respectfully,



Kenneth C. Keesee, Secretary/Treasurer
Greenbrier Co. Solid Waste Authority
C/o Greenbrier Co. Landfill
P.O. Box 1664
Lewisburg, WV 24901

MSES consultants, inc.

609 W. Main Street, Bldg. 2 • P.O. Drawer 190 • Clarksburg, WV 26302-0190
304/624-9700 • 304/622-0981 • 304/842-3325 • <http://www.msesinc.com>
Office Fax 24 Hour World Wide Web



July 28, 2003
Project No. 00-100

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DEPT. OF ENVIRONMENTAL PROTECTION
SW & E R S SECTION

Mr. Larry Atha
WV Department of Environmental Protection
1356 Hansford Street
Charleston, West Virginia 25301

COMMENTS ON PROPOSED MODIFICATIONS TO THE WEST VIRGINIA SOLID WASTE MANAGEMENT RULE 33 CSR 1

Dear Mr. Atha:

MSES Consultants, Inc. respectfully submits the following comments on the proposed Rule 33 CSR 1 to the West Virginia Department of Environmental Protection, Division of Water and Waste Management, for consideration.

3.2g.3 - Location Standards for Airport Safety

Please clarify if location standards apply to staging areas, transloading areas, transfer stations and other solid waste units.

3.2.o - Location Standards for Air Criteria

All structures that are part of the stormwater and sediment/erosion system, that are not a direct part of any earthen embankment relating to a waste unit, should be considered a diversion structure for the purpose of this section of the rule. The mountainous terrain of West Virginia makes all available areas for stormwater management structures very important to creating the most effective and functional stormwater management systems. Exempting stormwater and sediment/erosion structures from the location requirements will allow more usable land for these structures, increasing their effectiveness and improving maintenance.

4.5.c.2.D and 4.5.c.2.F - Drainage Ditches and Culvert Openings

Pre-existing structures that were installed according to an approved permit should be exempt from the design storm requirements. In some cases where facilities have been constructed, it may not be possible to increase drainage ditch cross sectional areas without extensive structural changes to adjacent topography.

Environmental *Engineering* *Energy* *Air*
Safety *Land Services* *Waste Management* *Water* *Industrial Hygiene*

Mr. Larry Atha

- 2 -

July 28, 2003

4.5.b.3 - Sediment Control

The rule should allow for reduction of the 0.125 acre-feet per acre of storage if a suitable Best Management Practices Plan and alternative design is approved by the Secretary. Large still ponds in West Virginia are disruptive of land and buffer areas and may increase mosquito larvae populations. Depending on types of soils, cleanout scheduling, use of silt filtering devices, pond baffling, re-vegetation practices and use of temporary interior sediment sumps, performance of sediment control ponds can be enhanced to function extremely well at a lesser sediment loading design.

4.5.d.4.A.(i) and 4.5.d.6.A.7.(j) - Dual Containment

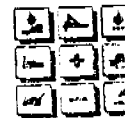
Temporary leachate detection and collection pipes that are installed to convey leachate during construction or through an approved future disposal area footprint that will be removed by subsequent expansion of the facility should be exempted from dual containment. The purpose of dual containment is to provide a witness system to monitor and remove any leakage. If a suitable design can be presented, then the Secretary should be allowed to approve such a design over dual containment. For example, modern HDPE end fused pipes are very rugged and durable. Additionally, bedding and trench liners can be designed to act as a monitoring system through the use of manholes and or access ports to detect leakage. Post construction pressure testing and line inspection procedures that are currently required can prevent or detect any leakage.

4.5.g.4 - Final Slopes

This section of the rule should allow for a variance by the Secretary based on stability analyses, consolidation studies, waste placement practices, type of waste accepted, leachate and gas management plans, and runoff calculations. Final slopes in landfills over time become flatter than newly constructed slopes due to consolidation and decomposition of waste. On slopes, this consolidation occurs in an area of the landfill where it is impossible due to effects on stability, limited work area, and safety of haulage and placement equipment to re-open the area for active waste placement. The life of a waste disposal facility is designed based on a set final slope to occur at some point near the end of the facility's life. If the landfill cannot be constructed to achieve this future final slope, then a reduction of the designed life and waste capacity of the facility results. To not allow a mechanism in the rule that allows construction of a slope steeper than 3 to 1 or with benches at greater vertical spacing than 20 feet if properly designed and installed will result in a loss of airspace and capacity of all landfills in West Virginia.

4.10.a.1.C. and 6.1.e.1.B. - Passive Gas Vents

Passive gas vents should not be required without the possibility of any adjustment to timing of installation and spacing based on age of waste, type of waste, occurrence of leachate seeps, condition of vegetation, measurements of gas monitoring plan, waste placement procedures and design of final cap. Placement of gas vents is controlled by many factors that can be physically observed, monitored and quantified. To require passive gas vents without any mechanism to allow consideration of these factors would be counter productive, contribute to unnecessary costs and create conditions that hinder the most effective operation to achieve an efficient final contour and closure of the facility.

MSES

Mr. Larry Atha

- 3 -

July 28, 2003

Other Comments

Existing Facilities: Please clarify the degree (in regards to being retroactive) to which the proposed modifications will be applied to existing permitted waste unit structures.

4.5.d.3.A.1 - Sub Base Layer

Change moisture requirement to wet of optimum to no greater than five percent (5%). Allow variance in an approved QAQC plan specific to the material in use that insures permeability and structural integrity.

MSES Consultants, Inc. appreciates this opportunity to submit comments on the proposed modifications to Rule 33 CSR 1. If you have any questions, please call me at 304/624-9700.

Sincerely,



Charles H. "Sam" Muncy, PE, PS, MSCE
Senior Project Engineer

CHM/cdf

cc: Larry Rine (MSES Consultants, Inc.)

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Comments on the proposed revisions to Series 1 of
Solid Waste Management Rule by
EAGON & ASSOCIATES, INC.

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JUL 28 2003

DEPT. OF ENVIRONMENTAL PROTECTION
SW & E R S SECTION

I. Introduction

On June 11, 2003, the West Virginia Department of Environmental Protection, Division of Water and Waste Management (DEP) filed notice of proposed modifications to the West Virginia Solid Eagon & Associates, Inc. Rule, 33 CSR 1-1, et seq. (the Rule). A public hearing was held on July 17, 2003 on the proposed revisions. Written comments on the proposed rule are due on or before July 28, 2003.

II. Comments

Eagon & Associates, Inc. respectfully requests that the DEP consider the following comments and recommendations for the specific sections of the Rule as outlined below:

3.8.d - - Hydrologic Information.

The proposed changes in this section would require groundwater wells to be sampled at portions of the uppermost aquifer including the "surface of the saturated zone" that is most likely to be affected by contamination released from the landfill. We agree the detection monitoring well network should target the portion of the groundwater zone that allows detection at the earliest practicable time of a potential landfill release to the environment, however the most appropriate monitoring location is not in all cases the water table surface.

1. The best landfill indicator parameters include several of the volatile

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organic parameters and the most mobile inorganic indicators such as chloride, sodium, et al. because when dissolved in groundwater they essentially move with groundwater via advective flow. Therefore, monitoring wells should be screened at an interval consistent with groundwater flow maps and vertical gradients, if any. Since a 20-foot well screen is an acceptable well construction in West Virginia, wells are typically located in close proximity to the waste boundary, and the intake of a sampling pump can be positioned at different levels within the well screen to compensate for any vertical gradients, the appropriate portion of the groundwater zone can be effectively sampled to satisfy the objective of detecting a potential landfill release at the earliest practicable time.

2. Sampling groundwater at, or slightly below, the water table (i.e., within the upper 15 feet if a 20-foot well screen is used) will provide a representative sample for detection monitoring purposes since the effects of chemical diffusion and dispersion are discernible within this upper portion of the groundwater zone. Furthermore, the use of dedicated pumps and low-flow purging and sampling techniques can be used to target a specific portion of the screen interval to optimize the portion of the groundwater zone that is sampled as mentioned in item #1 above. This approach is very effective considering the majority of wells in a monitoring network are located in close proximity to the waste boundary.
3. The most appropriate monitoring location is not always at the water table surface. An example would be a setting where there are lower permeability materials at the water table (e.g., clays or other low

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permeability material), underlain by higher permeability material such as sand. In this case, monitoring groundwater at the water table surface within lower permeability materials likely would not be an effective method to detect a release from the landfill at the earliest practicable time. Rather, the higher permeable material occurring below the water table surface would detect a potential landfill release at the earliest practicable time.

4. If groundwater conditions vary appreciably whereby the water level fluctuations are significant, the well being effected may require replacement; however, it may be reasonable to sample that well during periods when the screened interval is appropriately saturated. In addition, if a well becomes dry, it does not necessarily mean that well's screen placement is inadequate. Since the purpose of detection monitoring is to detect a potential landfill release at the earliest practicable time, monitoring a dry well (or well that may be dry some time of the year) that is properly located and screened within the hydrogeologic regime may be valuable to the monitoring program for its potential to yield water that can be sampled and analyzed. Therefore, the appropriateness of a well's screened interval should include the potential value of monitoring that well even if it has the potential to be dry since its position in the hydrogeologic regime may still provide the detection of potential landfill release at the earliest practicable time. Therefore, these considerations should be considered if the proposed requirement that each monitoring system must yield representative samples at ninety-five percent (95%) of

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groundwater monitoring events□ becomes part of the new rule.

5. The construction of well clusters in a detection-monitoring program should not be required unless these additional wells truly provide for early warning of a potential landfill release. Furthermore, the addition of unnecessary monitoring wells into the detection-monitoring program increases the number of statistical comparisons and will typically increase the site-wide false positive rate and decrease statistical power (see ASTM D6312-98). Both of these occurrences negatively impact the effectiveness of the statistical application to the detection-monitoring data and should be avoided as much as practicable.

It is recommended that the proposed rule provide comment that the portion of the uppermost aquifer requiring monitoring consider the points made above and that the monitoring well network be based on site-specific hydrogeologic conditions and sound technical judgment.

In addition, while the earlier part of this paragraph would imply some question as to the definition of the saturated zone in terms of perched and/or seasonal zones, the latter portion would require that the "saturated zone" be defined as a perennial (and probably a non-perched) horizon. The "surface of the saturated zone" stated in the proposed Rule would not necessarily be compatible with the "uppermost aquifer" requirement, given the definition of the term "aquifer" in Section 2.9. Eagon & Associates, Inc. suggests that the DEP address this inconsistency and revise the proposed section accordingly. The requirement to monitor at the "surface of the saturated zone" may, in some hydrogeologic settings, lead to unnecessary monitoring locations that dilute the strength of the statistical analysis.

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3.8.d.1

In this proposed section Eagon & Associates, Inc. suggests that "background" be the utilized term rather than "upgradient" in order to be consistent with Section 3.8.d.1.c.1(a), which properly recognizes that upgradient well placement is not always possible or desirable. More importantly, Eagon & Associates, Inc. believes that the last two sentences of this proposed paragraph would disallow an intrawell monitoring approach, which Eagon & Associates, Inc. is statistically more practical than an interwell approach because the influences of spatial variability is completely eliminated from the statistical comparison. Therefore, an intra-well statistical approach should always be encouraged (see ASTM D6312-98). In addition, Eagon & Associates, Inc. believes that the proposed requirement that "all monitoring systems must monitor the same aquifer" is inconsistent with the requirement that the "top of the saturated zone" be sampled in all cases unless the DEP clarifies that the top of the saturated zone only applies to the uppermost aquifer and not to a perched groundwater zone. As such, Eagon & Associates, Inc. recommends that the DEP revise this proposed language according to the comments hereinabove.

3.8.d.1.A

In this proposed section, Eagon & Associates, Inc. recommends replacing the phrase "in groundwater samples are not affected" with ".... representative samples of groundwater can be obtained for the purpose of establishing concentrations of Phase I and Phase II parameters". The phrase "in groundwater samples are not affected" is too subjective and would be difficult to qualify in many cases because field conditions change over time. Potential problems with sample results are

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typically determined in the field during sample collection procedures (e.g., high sample turbidity, deteriorating well-head construction, etc.) and during statistical analysis of the data. If it is determined that the monitoring well is the cause of spurious sample results, the well should be addressed accordingly by the owner/operator (i.e., re-development, well replacement, etc.). Therefore, Eagon & Associates, Inc. suggests that the proposed phrase "in groundwater samples are not affected" be either deleted or qualified with the comments recommended above.

3.8.d.1.B

Eagon & Associates, Inc. suggests the following factors be taken into account in regards to how multiple zone monitoring effects the detection-monitoring program:

The detection monitoring well network should target the groundwater zone that provides detection of a potential landfill release at the earliest practicable time. Consistent with this approach, the following factors should be considered in setting up a groundwater monitoring program. The best landfill indicator parameters include several of the volatile organic parameters and the most mobile inorganic indicators such as chloride, sodium, et al. because when dissolved in groundwater they essentially move with groundwater via advective flow. Therefore, monitoring wells should be screened at an interval consistent with groundwater flow maps and vertical gradients, if any. Since a 20-foot well screen is an acceptable well construction in West Virginia, wells are typically located in close proximity to the waste boundary, and the intake of a sampling pump can be positioned at different levels within the well screen to compensate for any vertical gradients, the appropriate portion of the groundwater zone can be effectively sampled to satisfy the objective of detecting a potential landfill release at the earliest practicable time.

The construction of well clusters in a detection-monitoring program should not be required unless these additional wells truly provide for early warning of a potential landfill release. Furthermore, the addition of unnecessary monitoring wells into the

WORKING DRAFT

detection-monitoring program increases the number of statistical comparisons and will typically increase the site-wide false positive rate and decrease statistical power (see ASTM D6312-98). Both of these occurrences negatively impact the effectiveness of the statistical application to the detection-monitoring data and should be avoided as much as practicable.

Additional salient points are made in our comments to Section 3.8.d. above.

3.8.d.1.C

The proposed requirement that monitoring systems allow detection "at the earliest practicable time" is not necessarily compatible with the "top of saturated zone" monitoring requirement. Where a more-permeable aquifer is unconfined beneath a waste area, but becomes confined or semi-confined in areas downgradient of the site, it may still be the most appropriate horizon for monitoring even if it does not represent the "top of the saturated zone." Please also refer to our comments to Section 3.8.d. above. Therefore, Eagon & Associates, Inc. recommends that the DEP revise the proposed language to allow for the appropriate monitoring requirements.

3.8.d.1.C.1

Eagon & Associates, Inc. suggests that this proposed section include a prelude stating "In instances where an upgradient versus downgradient interwell comparison monitoring is employed..."

3.8.d.1.C.1(a)(1)-(2)

Eagon & Associates, Inc. recommends that the DEP delete the phrase "of groundwater before it flows under the Eagon & Associates, Inc. area" and replace it with: "of background groundwater at the downgradient point of compliance well(s) than are samples". The primary purpose of 3.8.d.1.C.1(a)(2) is to be consistent with federal Subtitle D rules that allow a site to

WORKING DRAFT

perform intra-well statistical comparisons where background is determined at each downgradient point of a compliance well (see attached letter from USEPA).

2.9/3.8.d/3.8.d.1.C.2

The proposed requirement that the "top of the saturated zone" be the focus of monitoring is at odds with the requirement that all wells monitor the same aquifer, given the definition of the term "aquifer" in Section 2.9. The proposed Rule needs to be made consistent as to focus and it is recommended that the "top of the saturated zone" be clarified to apply to the uppermost aquifer only. Therefore, Eagon & Associates, Inc. recommends that an intra-well comparison approach be regarded as "most preferred," which will eliminate any potential inter-well statistical application problems using upgradient wells that are not screened in the same uppermost aquifer or within a different portion of the same aquifer as the downgradient wells (although provisions allowing interwell approaches should be maintained, to allow for different conditions from one site to another). With the acceptance or promotion of intra-well comparison approaches, there is less need for specification of "same aquifer" requirements.

In addition, Eagon & Associates, Inc. suggests that the relevant point of compliance be defined in proposed Section 3.8.d.1.C.2. Specifically, the relevant point of compliance is defined as "a point that is no more than 150 meters (492 feet) from the Eagon & Associates, Inc. unit boundary and must be located on land owned by the owner of the SWLF."

3.8.d.1.G.1-5

Eagon & Associates, Inc. believes that one of the more significant topics of the proposed amendments concerns the appropriateness of the screened interval installed within facility groundwater monitoring wells (3.8.d.G.1-5). These subsections would require that statistical testing be performed Each time the water level is determined not to be within the screened interval. The proposed Rule would also require reporting of this analysis, subsequent analysis and reporting

WORKING DRAFT

of conditions of other wells, and extension or replacement of wells and documentation of these activities, if necessary. The timing of the reporting and remedial measures is also specified within these proposed subsections.

The proposed language requires a sample to be collected at the top of the saturated zone even though a sample collected at this interval would not necessarily provide a better detection - monitoring sample. Eagon & Associates, Inc. experience has shown that sampling groundwater at, or slightly below, the water table (i.e., within the upper 15 feet if a 20-foot well screen is used) will provide a representative sample for detection monitoring purposes since the effects of chemical diffusion and dispersion are discernible within this upper portion of the groundwater zone based on results from landfill monitoring programs across the country. Furthermore, the use of dedicated pumps and low-flow purging and sampling techniques can be used to target a specific portion of the screen interval to optimize the portion of the groundwater zone that is sampled. This approach is very effective considering the majority of wells in a monitoring network are located in close proximity to the waste boundary.

In addition, the most appropriate monitoring location is not always at the water table surface. An example would be a setting where there are lower permeability materials at the water table (e.g., clays or other low permeability material), underlain by higher permeability material such as sand. In this case, monitoring groundwater at the water table surface within lower permeability materials likely would not be an effective method to detect a release from the landfill at the earliest practicable time. Rather, the higher permeable material occurring below the water table surface would detect a potential landfill release at the earliest practicable time. Finally, if groundwater conditions vary appreciably whereby the water level fluctuations are significant, the well being effected may require replacement; however, it may be reasonable to sample that well during periods when the screened interval is appropriately saturated. In addition, if a well becomes dry, it does not

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necessarily mean that well's screen placement is inadequate. Since the purpose of detection monitoring is to detect a potential landfill release at the earliest practicable time, monitoring a dry well (or well that may be dry some time of the year) that is properly located and screened within the hydrogeologic regime may be valuable to the monitoring program for its potential to yield water that can be sampled and analyzed. Therefore, the appropriateness of a well's screened interval should include the potential value of monitoring that well even if it has the potential to be dry since its position in the hydrogeologic regime may still provide the detection of potential landfill release at the earliest practicable time.

In addition, the proposal requiring a statistical test to determine an appropriate screened interval would be problematic in application, since it is unclear how such a test would be performed. It would be more useful to perform an evaluation of the appropriateness of the screened interval for each sampling event based on the hydrogeologic regime, site-specific conditions (e.g., water levels, surface water control features, other construction features, etc), and a review of published hydrogeologic information. Eagon & Associates, Inc. experience has shown that such an evaluation would provide enough detail to determine whether the screen interval provides for early warning consistent with the intent of detection monitoring. Eagon & Associates, Inc. believes that a statistical analysis, as proposed by the agency, would not achieve this goal.

Eagon & Associates, Inc. suggests that if the screened interval is shown not to be appropriate (or the well is dry) after evaluations of available hydrogeologic information, the well should be potentially replaced before the next sampling event, considered an ineffective monitoring point and be abandoned, or retained as a wet/dry well depending on its location relative to the landfill and where it is screened. Eagon & Associates, Inc. recommends that this alternative evaluation be implemented in place of the DEP's proposed statistical analysis.

WORKING DRAFT

The requirement to submit a determination that the well yielded no sample or an inadequate within 30 days of sampling is too short of a timeframe. Given that the well likely will not be sampled again for 180 days, 60 days should be allowed.

The requirement that the Secretary determine the best interval for monitoring could lead to problems. What is the owner/operator to do if the Secretary does not respond to a request to make the determination?

3.8.d.1.G.3

The proposed time frame for reporting (10 days beyond well replacement activities) is unreasonably short. Eagon & Associates, Inc. recommends that it be extended by at least another 35 days.

3.8.d.1.G.5

It is unclear to Eagon & Associates, Inc. as to why this proposed requirement is necessary. If each monitoring system is evaluated according to 3.8.d.1.G., why would it need to be evaluated again? More importantly, a dry well (or partially saturated well screen) does not necessarily mean that the well's screen placement is inadequate or that additional wells be required to meet the intent of detection monitoring. Since the purpose of detection monitoring is to provide early warning of potential landfill release, monitoring a dry well or partially saturated well screen (or a well that may be dry some time of the year) that is properly located and screened within the hydrogeological regime would be valuable to the monitoring program for its potential to yield water that can be sampled and analyzed. An example would be groundwater that is seasonally present in a coal layer. It is not uncommon to have coal layers that are saturated for 6 to 9 months out of the year, but dry for the remainder of the year. Screening the well into the underlying clay horizon will not yield

WORKING DRAFT

water during the dry season. Although perhaps a very effective monitoring location, this would not be allowed under the proposed rule change because of the requirement to be saturated 95% of the time. Therefore, Eagon & Associates, Inc. experience has shown that the appropriateness of a well's screened interval should include the potential value of monitoring that well - - even if it has the potential to be dry - - since its position in the hydrogeologic regime may still provide for early warning of a potential landfill release. Eagon & Associates, Inc. recommends that the above clarification be provided in the Rule.

4.11.a. - - Groundwater Monitoring.

Per Section 4.11.a.5 (Evaluation of Data) the permittee must determine whether maximum contaminant levels (MCLs) have been exceeded for each parameter or constituent required in the particular groundwater monitoring program that applies to the facility, to be determined at each monitoring event. Statistical analyses would be performed pursuant to the procedures of ASTM Standard D 6312-98, "Standard Guide for Developing Appropriate Statistical Approaches for Ground-Water Detection Monitoring Programs". The comparison of the laboratory and statistical analytical data to the Phase I / Phase II (as appropriate) MCLs, as opposed to background, would perhaps be the most potentially significant aspect of the proposed amendments to this section of the rule. Identifying detections above an MCL in the report is a reasonable request. However, the MCL should not be used as a statistical limit for the following reasons:

1. In those cases in which the upper normal prediction limit (PL) or combined-Shewhart CUSUM control limit (determined in accordance with ASTM D6312-98) are above the MCL, but the background data are all below the MCL, the DEP should not require that these background limits be manually set to an arbitrary limit at the MCL or below. The only statistical interpretation of such a decision rule is to treat this arbitrary statistical

WORKING DRAFT

limit as a nonparametric PL. Unfortunately, the false positive rate of such a test will be very high when using the typically small sample sizes that are encountered in routine intra-well detection monitoring programs. To ensure a reasonable site-wide false positive rate under such conditions would require a very large sample size (e.g., $n > 40$), and/or a large number of verification resamples, in which all but one of the resamples could be above the MCL and the site would still pass (i.e., not trigger assessment monitoring).

2. The MCL is a regulatory standard and not a statistically derived concentration based on background data. As such, using the MCL as a statistical limit is inconsistent with the rules for detection monitoring, which is the statistical comparison of future sample results to background.
3. If we are forced to use a standards based limit (i.e., MCL) for determining a potential ground-water impact instead of performing a statistical analysis as required in the regulations, we will potentially miss gradual releases that would be detected by the CUSUM portion of the control chart at levels below the MCL.
4. Comparison of individual measurements to a standard is not an application of detection monitoring statistics, which is required by the DEP regulations.
5. An owner operator is required to determine if there is a statistically significant increase over background. Proposing to compare the MCL to future monitoring results is compliant with the rule only if it can be described as a statistical method to determine a statistically significant increase from background. This approach is problematic because comparing individual detections to a standard is not a statistical method. Detection monitoring rules also require us to determine if there has been a statistically significant change, which is not possible unless a robust re-sampling program is initiated (see item 1 of Statistical Problems). Therefore, the owner operator would be forced into non-compliance with the rule.
6. If the detection-monitoring rule for statistics is not followed, the mechanism to enter assessment is unclear.
7. Using a standard based approach, it will be impossible to meet the provisions of the rule. Specifically, it will not be possible to determine if a statistically significant increase over background has occurred.

WORKING DRAFT

If the MCL is used as a statistical limit the owner/operator can be forced into a position of non-compliance with specific provisions of the rule to meet the rather broad interpretive requirement to maintain detections below the MCL to be "protective of the environment". A standards based approach could be used while maintaining compliance, however the impact on the quality of the statistical analysis is significant and should be considered carefully before this is required. Furthermore, the time and effort that will be required to satisfy the intent of the detection-monitoring rule (i.e., determining if there is a statistically significant increase over background) will be significant.

In response to the proposed groundwater monitoring regulations, it is not clear how the proposed regulations affect existing facilities. Will permit renewals have to meet new regulations? Will facilities have to meet new regulations immediately or will they have a time frame to upgrade? Eagon & Associates, Inc. suggests that the proposed requirements be applied prospectively only, not retrospectively. As such, Eagon & Associates, Inc. also suggests that the DEP revise the proposed section to clarify its prospective application.

In addition, Eagon & Associates, Inc. suggests that the following proposed subsections be revised by the DEP regarding groundwater monitoring requirements:

4.11.a

The term "background" is proposed to be replaced by "upgradient", but paragraph 3.8.d.1.c.1(a) provides for determining "upgradient" water quality from locations or waters that are not actually upgradient of the site. The term "background" would be more accurate, consistent, less confusing term and, therefore, Eagon & Associates, Inc. recommends that its usage be retained.

4.11.a.3

Comment 1: This proposed subparagraph would require the use of a computer flow model for each site, and the proposed stipulation regarding the number of grid nodes implies a numerical (as

WORKING DRAFT

opposed to analytical) model. While numerical or analytical modeling can be useful and enlightening in assisting the investigator in understanding the hydrogeology of a site, it is inappropriate to consider the specific outputs of a computer model as a basis for determining regulatory compliance. A model is only as good as the input data (which can be significant) and the essential foundation is a proper hydrogeologic concept (or "conceptual model") of the site. The monitoring network must be designed in conformity with the conceptual hydrogeologic model, and to attempt to "fine-tune" precise well placements in an aquifer system (usually a fracture-flow system, in West Virginia) on the basis of specific flow lines drawn by a computer graphics program is unrealistic and undesirable from all standpoints.

Furthermore, many, if not most, West Virginia landfill sites are not amenable to conventional numerical modeling because of site conditions (including topography, unsaturated flow, and fracture controls on flow). At the great majority of sites, the best and most appropriate "model" is a well-defined, well-understood conceptual model to which analytical solutions for flow may be applied. As such, the laborious procedure of attempting to "force-fit" the site hydrogeology into a complicated computer model is unwarranted and could result, at best, in only a "false sense of security" in the system design. Again, such computer modeling has valid applications in many circumstances in assisting the investigator's understanding of site characteristics. However, requiring such modeling as a specific basis for monitoring system design is inappropriate and undesirable. The computer - generated indications should never take the place of sound hydrogeologic reasoning. Finally, the application of a computer model at a landfill site would provide little added insight regarding appropriate well location or screened interval placement considering monitoring wells are typically positioned in close proximity to the waste boundary.

Comment 2: Eagon & Associates, Inc. recommends that the DEP change the proposed language in Section 4.11.a.3 to [site-specific conceptual groundwater flow model]. This would clarify the rule

WORKING DRAFT

and eliminate confusion that the permittee must conduct numerical flow modeling at each landfill.

Eagon & Associates, Inc. believes that the proposed requirement of □vectors at one hundred (100) or more nodes of a regular orthogonal grid which spans all active and inactive disposal areas□ is excessive. This language would require calculating the flow velocity along 100 flow vectors, which would be a laborious process. Most monitoring systems are comprised of a limited number of wells and, therefore, the flow determinations are approximations based on professional judgment. Requiring this level of detail based on limited input data would be unnecessary and, as such, Eagon & Associates, Inc. recommends that this proposed requirement be deleted and replaced with best professional judgement to make flow determinations.

4.11.a.4.B

The proposed phrase □background upgradient water quality□ is confusing in this proposed section. The intent of federal Subtitle D is to allow background to be established at downgradient locations for intra-well statistical analysis, since establishing upgradient background concentrations is not needed for this application. Therefore, background that is established at other locations not upgradient of the landfill is representative of background at that location, which is always more representative than □background upgradient water quality□ when performing intra-well statistics by definition. As such, Eagon & Associates, Inc. recommends that the DEP revise this proposed section accordingly.

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WEIRTON
STEEL CORPORATIONDEPT. OF ENVIRONMENTAL PROTECTION
SW & E R S SECTION

VIA FACSIMILE and EMAIL

July 28, 2003

H. Michael Dorsey, Acting Director
Division of Water and Waste Management
1356 Hansford Street
Charleston, WV 25301-1401

RE: Proposed Modifications to the West Virginia Solid Waste Management Rule
33CSR1

Dear Mr. Dorsey,

Weirton Steel Corporation ("WSC") has reviewed the proposed modifications to the West Virginia Solid Waste Management Rule - 33 C.S.R. 1-1, *et seq* ("Rules") and can't help but notice that the proposed changes to the Rules do little to encourage beneficial use or increase recycling in West Virginia. The thrust of the proposed changes appears to continue the "command and control" theme of past rule makings by imposing additional restrictions on the handling and management of solid waste with minimal attention given to providing incentives that encourage re-use or recycling. Such incentives are necessary if West Virginia is serious about preserving its natural resources, conserving expensive landfill space for true environmental hazards, and providing a struggling state economy with ways to reduce costs and benefit the environment. WSC is hopeful that the Division of Water and Waste Management ("Division") will consider certain modifications and additions, as outlined below, so that West Virginia's Solid Waste Management Rules can move into the 21st century. The suggestions listed below are not new and are borrowed from the solid waste management rules of some of the states that border West Virginia.

1. The following definitions need to be included in the Rule to more fully describe materials and better characterize their potential uses.

"Beneficial Use" – Use or reuse of solid waste for commercial, industrial or governmental purposes, if the use does not harm or threaten public health, safety, welfare or the environment.

"Clean fill" – Uncontaminated, nonwater-soluble, nondecomposable, inert solid material used to level an area or bring the area to grade. The term does not include materials placed in or on the waters of the State.

"Coproduct" - A material generated by a manufacturing or production process, or a spent material, of a physical character and chemical composition that is consistently equivalent to the physical character and chemical composition of an intentionally manufactured product or produced raw material, if the use of the material presents no greater threat of harm to human health and the environment than the use of the product or raw material. A material may not be compared, for physical character and chemical composition, to a material that is no longer determined to be waste in accordance with ___ (see Comment No. 3 relating to determination that a material is no longer a waste). A coproduct determination, which shall be made in accordance with ___ (see Comment No. 4 relating to coproduct determinations), only applies to materials that will be applied to the land or used to produce products that are applied to the land, including the placement of roadway aggregate, pipe bedding or construction materials, structural fill and clean fill. Sizing, shaping or sorting of the material will not be considered processing for the purpose of this definition.

2. The following exemptions need to be added to the exemptions for solid waste that are listed in Section 2.120 of the Rule. This will encourage beneficial use, waste reduction and recycling, and conserve landfill space.

2.120.h. Materials determined not to be a solid waste in accordance with _____. (see Comment No. 3 relating to determinations that a material is no longer a waste).

2.120.i. Materials determined to be coproducts in accordance with _____. (see Comment No. 4 relating to coproduct determinations).

3. The following provisions need to be added to the Rule to permit the Secretary to grant determinations that a material is not a solid waste. This will encourage beneficial use, waste reduction and recycling, and conserve landfill space.

(a) *Beneficial use.* The Secretary will make a determination that a solid waste which is beneficially used ceases to be a solid waste if it is used in a manner that does not harm or present a threat of harm to public health, safety, welfare or the environment.

(b) *Determination.*

(b)(1) At the request of the waste generator, the Secretary may make a determination that, subsequent to the processing activity, the processed waste ceases to be a waste even if it does not meet the requirements for a coproduct.

(b)(2) The Secretary will only make this determination if the applicant demonstrates the following to the Secretary's satisfaction:

(b)(2)(i) The waste will be used as an ingredient in a manufacturing or production process or as a substitute for a commercial product.

(b)(2)(ii) At a minimum, use of the waste will not:

(b)(2)(ii)(A) Harm or present a threat of harm to the health, safety or welfare of the people or environment of the State through exposure to constituents of the waste.

(b)(2)(ii)(B) Present a greater harm or threat of harm than the use of the product or ingredient which the waste is replacing.

(b)(2)(iii) The physical character and chemical composition of the solid waste contributes to the usefulness of the product, and nothing in the physical character or chemical composition of the waste interferes with the usefulness of the product.

(c) *Revocation of determination.* The determination under this section is automatically void, and the material is a waste, if the material is used in a manner inconsistent with the terms under which it was determined to no longer be a waste. The Secretary may revoke a determination under this section if the use of the material does not meet the requirements of this section.

(d) A person whose request for solid waste determination is denied by the Secretary may appeal such action to the environmental quality board as provided in article one [§§22B-1-1 *et seq.*], chapter twenty-two-b of the West Virginia Code.

4. The following provisions need to be added to the Rule to permit determinations regarding co-products. This will encourage beneficial use, waste reduction and recycling, and conserve landfill space.

(a) *Coproduct determination.* In addition to meeting the conditions of the definition of "coproduct" in section 2.____ (relating to definitions), a person performing a coproduct determination shall evaluate chemical composition and threat of harm to the environment and public health in accordance with this section. A proposed coproduct may not present a greater threat of harm to human health and the environment than use of an intentionally manufactured product or produced raw material. A greater threat of harm is presented if one of the following is met:

(a)(1) For comparison of the proposed coproduct with a product or produced raw material, hazardous or toxic constituents are present at elevated levels unless an assessment of hazardous and toxic constituents demonstrates that the constituents are not biologically available.

(a)(2) For a proposed coproduct where no product or produced raw material will be replaced, an assessment of hazardous and toxic constituents demonstrates that the constituents are not biologically available.

(b) If the proposed coproduct is being compared to an intentionally manufactured product or produced raw material, a person performing a coproduct determination shall demonstrate that the use of a proposed coproduct does not present a greater threat of harm to human health and the environment by performing the following:

(b)(1) An evaluation to determine which, if any, hazardous or toxic constituents are present in the proposed coproduct at levels exceeding those found in the material it is replacing.

(b)(2) An evaluation of the total levels of hazardous or toxic constituents, including the constituents in §261.34(e) (relating to appendices), to determine whether the total levels of constituents contained in the proposed coproduct exceed the total levels

found in the intentionally manufactured product or produced raw material it is replacing. Based on generator knowledge, if a hazardous or toxic constituent is not present evaluation of total levels is not required.

(b)(3) An evaluation of the levels of leaching of hazardous or toxic constituents, including the constituents in §261.34(e), to determine whether the levels of leaching from the proposed coproduct exceed the levels of leaching from the manufactured product or produced raw material it is replacing. A leaching procedure shall be performed that is appropriate for the intended use of the proposed product. Based on generator knowledge, if a hazardous or toxic constituent is not present evaluation of leaching levels is not required.

(b)(4) The routes of exposure to humans and ecological receptors shall be identified. These routes of exposure shall include ingestion, inhalation, dermal contact, leaching to the groundwater, plant uptake and surface runoff potential. Mitigating circumstances, such as protective gear worn by workers to reduce exposure during processing or application of the proposed coproduct, shall be identified.

(b)(5) The use of a 95% upper confidence interval, using the *"Test Methods for Evaluating Solid Waste"* (EPA SW-846), may be applied to the comparisons of constituent levels between the proposed coproduct and the intentionally manufactured product or produced raw material it is replacing.

(c) If the proposed coproduct is not being compared to an intentionally manufactured product or produced raw material, a person performing a coproduct determination shall demonstrate that the proposed coproduct does not present a threat of harm to human health and the environment and the hazardous or toxic constituents are not biologically available by performing the following:

(c)(1) An evaluation of the total levels of hazardous or toxic constituents, including the constituents in §261.34(e). Based on generator knowledge, if a hazardous or toxic constituent is not present evaluation of total levels is not required.

(c)(2) An evaluation of the levels of leaching of hazardous or toxic constituents, including the constituents in §261.34(e). Based on generator knowledge, if a hazardous or toxic constituent is not present evaluation of leaching levels is not required.

(c)(3) The routes of exposure to humans and ecological receptors shall be identified. These routes of exposure include ingestion, inhalation, dermal contact, leaching to the groundwater, plant uptake and surface runoff potential. Mitigating circumstances, such as protective gear worn by workers to reduce exposure during processing or application of the proposed coproduct, shall be identified.

(c)(4) The use of a 95% upper confidence interval, using the *"Test Methods for Evaluating Solid Waste"* (EPA SW-846), may be applied to the analytical results of the constituents evaluated.

(d) A person who completes a coproduct determination shall maintain documentation supporting the determination. This documentation shall be available to the Secretary upon request.

(e) A person who completes a coproduct determination shall provide documentation supporting the determination to persons selling, transferring, possessing or using the material.

(f) A person whose request for coproduct determination is denied by the Secretary may appeal such action to the environmental quality board as provided in article one [§§22B-1-1 *et seq.*], chapter twenty-two-b of the West Virginia Code.

5. **There is no basis for limiting the exemptions for the disposal of construction/demolition wastes and trees, stumps, woodchips and yard waste to ½ acre sites as outlined in Section 3.16.e.2 if disposal occurs on the same property.**

The WSC facility is located on nearly 1400 acres of property and has been in operation since 1909. Depending on the scope and size of a project, or the number of projects that might occur in a facility's lifetime, WSC or any large manufacturing facility could easily generate quantities of construction/demolition wastes and trees, stumps, woodchips and yard waste wastes that could not be practically managed in a ½ acre site. There is no reason to limit large manufacturing sites to ½ acres sites for the management of these types of wastes when the actual property may cover several hundred acres.

WSC is appreciates the opportunity to submit these comments for the Division's consideration and is hopeful that the concept of beneficial use can be incorporated into the final Rules for the benefit of West Virginia's environment and economy.

Sincerely,



Mark Vignovic,
Director Environmental Control Department

From: CYNTHIA MUSSER
To: NATALIE HARDMAN
Date: 7/9/03 5:59PM
Subject: C/D language

Natalie

In addition to my other comment (1.6.c- wrong section of Chapter 20-7), i'd like to see the definition of C/D be changed to reflect the materials prohibited by GW. If the GPP is a part of the permit, it specifically prohibits asphalt, lead paint, caulking, paint cans, metal, etc. Let's get the definition and the GPP together. Thanks
Cindy

CC: LARRY BETONTE ; MIKE ZETO

**Comments presented by Dusty Williams
Title 33 proposed rule changes for the
WV Dept. of Environmental Protection,
Division of Water & Waste Management
July 17, 2003**

Comments presented by Dusty Williams
Title 33 proposed rule changes for the West Virginia Department of Environmental
Protection, Division of Water & Waste Management
July 17, 2003

- 1.6.b Solid waste may not be disposed of in a dumpster belonging to any other person than its owner. *In many instances the owner of dumpsters is the service provider; suggest owner or renter of dumpsters.....*
- 2.6 "Anomalous Event" this definition includes implementation of a contingency plan, or an event for which no plan exists. *The definition for anomalous means departure from the regular, inconsistent or irregular and the definition for event is a happening or occurrence. The definition should not include action plans. Would suggest anomalous event is any irregular or abnormal event that occurs at a solid waste facility; such as slope failures, explosions or fires that last for 45 minutes..*
- 2.14 "Best Management Practices" ..this definition includes schedules of activities and prohibitions.. *would suggest.. BMP's are measures that are taken to conduct landfill operations in a manner that minimizes environmental impacts.*
- 2.52 Generator means any person or facility whose act or process produces solid waste or whose act first causes a solid waste to become subject to regulation. *Please explain what "or whose act first causes a solid waste to become subject to regulation...since all solid waste(s) are subject to regulation.*
- 2.53 "Groundwater Monitoring System" means one well, or cluster of closely spaced wells, used to monitor groundwater quality. *The industry standard or conventional thought is a "groundwater system" refers to all the wells at a site that monitor one equivalent water-bearing zone. This change means that a ground water monitoring system would include a cluster of closely spaced wells. When in reality closely spaced wells are usually monitoring different vertically discrete groundwater units or horizons.*
- 3.7.j. Bonding and Financial Assurance....this provision says financial assurance must be submitted to DEP. *It does not contemplate funding into PSC escrow accounts and it should include those requirements.*
- 3.8.d Hydrologic Information.. The permittee must install ~~~ Each monitoring system must yield representative samples at ninety-five percent of the groundwater monitoring events. *With two sample events per year..how is 95 percent determined and over what time period ?*

Comments presented by Dusty Williams
Title 33 proposed rule changes for the West Virginia Department of Environmental
Protection, Division of Water & Waste Management
July 17, 2003

3.8.d.1.G comment – *The permittee must determine by statistical testing of data from the monitoring system whether the screened interval is high and deep enough to satisfy 3.9.d. Statistical evaluations do not prove this type information. Statistical evaluations can only determine the relationship of one number to a set of numbers. the remainder of this article is apparently written to ensure that that the screened interval is at the top of the groundwater unit and requires a very limited time frame to drill, install, develop and sample. Moving a well changes the statistics generated from the groundwater constituents in the well (especially for intra-well analyses), so technically the well must be sampled 8 times, to develop background prior to determining if there are statistical exceedances. This holds true for any well that has been moved.*

3.8.d.1.G.4 comment – *A dry well should not initiate the redrilling of a well. Most states consider a dry well to indicate that the landfill is not leaking. For example, the Eastern United States has had drought conditions for about 4 years and now wells that were dry have come back due to the above average rainfall. Prematurely abandoning a well and redrilling a well is not a prudent method for monitoring groundwater at a landfill.*

3.13.1 Bonding and Financial Assurance for Solid Waste Facilities.. *This entire subsection essentially remains unchanged. Which means it does not address the current funding obligations/program with the WV Public Service Commission or the interagency memo of understanding. Nor does it provide any guidelines for releasing/reducing DEP required bonds as escrow amounts increase. This funding dilemma must be resolved or operators will be required to increase gate rates to recoup these overlapping and duplicative costs.*

3.18.c.3.C.1 Termination *This provision should only apply to “new” facilities. Any current facility in this situation should be grandfathered.*

Comments presented by Dusty Williams
Title 33 proposed rule changes for the West Virginia Department of Environmental
Protection, Division of Water & Waste Management
July 17, 2003

3.27.d If permittee has not begun construction within six(6)months ~~ *This should only apply to new facilities. Any facilities currently in this situation should be grandfathered.*

4.5.c.2.D *since there is no effective date do changes apply to new designs and/or current inplace installations ?*

4.5.c.2.F *since there is no effective date do changes apply to new designs and/or current inplace installations ?*

4.5.c.2.G *since there is no effective date do changes apply to new designs and/or current inplace installations ?*

4.5.d.5.A.9 *some landfills have approval to use "equivalent liner profiles" are these still in effect ?*

4.5.g.4 *Both of these sections create or fail to address the same problem..waste*
4.5.g.5 *settlement. It is one thing to have to flatten inner slopes, which will eventually be overlaid with additional waste. But outside(final) grades are another issue. Waste settles and with some predictability. A 33% slope with benches on 20' vertical placement actually equals about a 29% slope. This is a typical "outside slope" design and overtime this slope will flatten Out or settle. On outside slopes this settlement is almost impossible to recover. This lost airspace is a "sliver fill" and in most instances it can't be recovered. If this airspace can't be recaptured then gate rates will have to increase....less tons in the permitted footprint. The obvious solution is to build the final slopes steeper in anticipation of settlement. In the past many landfills incorporated 2.5:1 with the benches on the 20' vertical interval. Consequentially, the 2.5:1 slope with benches just about equals a 3:1. These "steeper" slopes will eventually settle and meet the 33% slope rule. Stability analysis have been done for this type configuration and safety factors of 1.7 are not unusual. Additionally, and very importantly benches have been installed. It would appear that responsible operators should be allowed to design, implement and monitor this steeper layout. The Department will certainly be able to monitor the results and the overall intent of these rules is being complied with.*

Comments presented by Dusty Williams
Title 33 proposed rule changes for the West Virginia Department of Environmental
Protection, Division of Water & Waste Management
July 17, 2003

- 4.10.a.1.c. Passive gas vents must be installed on disposal areas that have not received waste in six (6) months ~~~~minimum of one (1) per acre. *Although, there are many questions as to why this rule was written and how it relates to Title V, the annual emissions statements and certain operational issues, I would rather focus on questions relating to the implementation date and whether grand fathering will occur. So do current sites have to be retro-fitted with passive vents? If the answer is "yes" then this rule has the potential of doing more harm than good on slopes with intermediate cover. Generally, these areas will have a lot of slope and installing wells on these slopes would definitely destroy good vegetation and lets not forget that drill rig access roads will have to be cut in the slopes to get to well locations. My suggestion make this rule prospective and grandfather in current developed areas.*
- 4.11.a.3 *This seems excessive for landfill reporting, specifically if the landfill has not been impacting groundwater; as determined through geochemical, statistical and hydrogeologic analyses (e.g., vectors of flow at 100 or more nodes; flow lines that represent the time of transport from upgradient to downgradient, which may be difficult since hydraulic conductivity can vary across a site).*
- 4.11.c.2.G Addresses Phase II Assessment Monitoring and states, "...If the Secretary does not respond in writing to the permittee within 90 days the petition [for reinstatement of Phase I monitoring] will be deemed denied." *Regulators are busy people and to complete all work assignments is difficult; however, to have no action represent a denial of the request is unconscionable.*
- 4.12.1 Reporting anomalous events ~~ *As previously discussed the existing definition of anomalous event will create unnecessary reporting and in most instances wasted time developing plans, submitting plans, getting plans approved etc..etc.. For example....the weather forecast is for 3" of snow and low and behold we get 36". Well we'd have to report and implement and or develop a plan. We have a plan...remove the snow! I would suspect that this provision contemplates really unusual conditions: fires lasting over 45 minutes, explosions, slope failure and should reflect that intent..*

Comments presented by Dusty Williams
Title 33 proposed rule changes for the West Virginia Department of Environmental
Protection, Division of Water & Waste Management
July 17, 2003

- 4.12.b *Solid Waste tonnage Reports ~ Requiring that they be received by the 20th of the month will lessen the time available by the operator to prepare the documents. Additionally, the operator has no control on the mail handling and delivery problems...that's why post marked by a certain date has always been a regulatory condition. The Solid Waste Authority was left off the list and who is supposed to get the document at the PSC ?*
- 4.12.i *indicaties that the Secretary may specify the medium other than paper (e.g., internet, electronic, optical) for the transmittal of reports. This request may be technologically difficult to complete for some entities.*
- 4.14.c.1 *Free day ~ free day has been around for a long time..why do we now have to get approval of our schedule....the old system of providing the State with the schedule and copy a of the ad seemed to work real well at 5 landfills I know about!*

Responses to Comments on The Solid Waste Management Rule 33CSR1

Written comments were received from Mercer County landfill manager Jerry Haynes; Gary Bledsoe of the Associations of West Virginia Solid Waste Authorities and the Raleigh County Solid Waste Authority; Michael Hofe of REIC Labs; Richard Cooke of the Solid Waste Management Board; Charles Gillian, Christopher Daniels and Joe Sulesky of Alliance Consulting Inc.; Charles Short of McDowell County Solid Waste Authority; Ann Bradley of Spillman, Thomas & Battle; Edward J. George of Robinson and McElwee for Waste Management; Anne C. Blankenship of Robinson and McElwee for West Virginia Manufacturers Association; Rachel Lester of the McDowell County Economic Development Authority; Paul E. Hamrick of the Harrison County Solid Waste Authority; Kenneth C. Keesee of Greenbrier County Solid Waste Authority; Charles H. "Sam" Muncy of MSES Consultants, Inc.; Tom Jenkins of Eagon and Associates; Mark Vignovic of Weirton Steel Corporation; and citizens Cindy Musser and Dusty Williams.

The Public Hearing was conducted on Thursday July 17, 2003, at the Hansford Street DEP office. Oral commenters included: Dusty Williams, Jim Hern, Chris Daniels, John Tuckwiller, Gary Bledsoe, Eric Haynes, Larry Pickens, and Denver Davis. Other attendees who did not speak at the public hearing included: Kenneth Keesee, Linda K. Tennant, Michael Hofe, Ann Bradley, and Ann Blankenship.

The various comments received and the agency's responses are divided into seven basic groups: 1) Groundwater Monitoring, 2) Construction/Demolition Landfills, 3) Free Day Policy, 4) Definitions, 5) Bonding/Financial Assurance, 6) Landfill Construction and Maintenance, and 7) General Comments.

1) Groundwater Monitoring

Several commenters proposed that the groundwater amendments to this rule be withdrawn and/or subjected to a consensus group approach to find a solution to the issues. The agency agrees that the consensus group approach is a satisfactory resolution to the problem and will withdraw the applicable groundwater proposals and form a consensus group in the near future.

2) Construction/Demolition Landfills

Comment: The definition listed 2.37. "Construction/Demolition Waste" needs to be modified to conform to 5.4.a.

Response: The Agency agrees and has made the appropriate amendment.

Comment: Eliminate smaller Construction/Demolition landfill permits (Class D facilities) and require users go to established centralized areas where C&D material can be monitored and placed in lined facilities.

Response: The Agency agrees and this Rule has provided additional control is needed for such facilities, but thinks that the current changes address this need.

Comment: Under paragraph 3.16.e.2.B. "One-half Acre Exemption" that an exemption of more than one-quarter acre should have a map showing the specific location of the fill area on the land, types of construction and demolition waste utilized as fill material, approximate depth of fill material, dates fill material was placed and record this map with the property deed description on record in the county clerks office.

Response: The Agency disagrees. This change would be unenforceable.

Comment: We feel that paragraph 5.4.c.2. is not consistent with the siting requirements of 3.2.a.1.

Response: The Agency agrees and has amended 5.4.c.2. accordingly.

Comment: In subsection 2.24. the WVMA recommends that the current language "beneficial reuse of clean waste concrete/masonry substances for the purpose of structural fill or roadbase material" be retained in the proposed definition..... Concrete/masonry substances are excellent materials for use in structural fills and roadbases and do not pose leachate problems. Their reuse should be encouraged. Inspection/enforcement staff need a clear directive that such use of these materials is exempt from a Class D permit.

Response: The Agency agrees and has provided for this in a new subparagraph 3.16.e.2.C.

Comment: In subsection 2.37. "Construction/Demolition Waste" the proposed definition should be altered to include packaging for windows and doors, shingles, trash from construction workers lunches (including fast food bags, sandwich bags, lunch bags, sandwich wraps, soda pop cans, milk cartons, etc.).

Response: The Agency disagrees.

Comment: In paragraph 3.16.e.2. "Exemptions;" the WVMA would like this paragraph clarified to address if a developer can set aside an area in a subdivision where individual lot owners can dispose of stump disposal and other landclearing debris?

Response: The Agency believes that the guidelines in the existing rules are clear. If the commentor has additional questions the office may be contacted for clarification.

Comment: In paragraph 3.16.e.2. there is no basis for limiting the exemptions for the disposal of construction/demolition wastes and trees, stumps, woodchips and yard waste to ½ acre sites if disposal occurs on the same property.

Response: The Agency disagrees.

Comment: Construction/Demolition landfills should not be located within 50 miles of a solid waste municipal landfill.

Response: The Agency disagrees, the DEP cannot limit business opportunity to individuals.

Comment: Metal should be allowed in Construction/Demolition landfills because it is impossible to do a building demolition without some kind of wire, or metal framing, or nails, etc... Also all roofing materials should be allowed in C&D landfills.

Response: The Agency disagrees.

3) Free Day Policy

Comment: Change the definition for eligibility for Free Day participation in 4.14. to "Eligible Persons are those persons who do not have garbage service available for their area or do not have means for paying garbage collection fees."

Response: The Agency disagrees. The proposed change would not be consistent with WV Code § 22-15-7.

Comment: Free day has been around for a long time. Why do we now have to get approval of our schedule...the old system of providing the State with the schedule and copy of the ad seemed to work well at 5 landfills I know about!

Response: The Agency disagrees. The Agency is concerned that often the free day publication includes items contrary to Section 4.14. of 33CSR1.

Comment: I think paragraph 4.14.a.1. "Residential Solid Waste" should be restructured to have the phrase "not herein specified" before "generated at residential property."

Response: The Agency agrees and has amended 4.14.a.1. accordingly.

Comment: In paragraph 4.14.c.1. I suggest that the beginning of the first sentence should read "all commercial landfills, both public and private" so that the implication that public landfills are not commercial solid waste facilities will be avoided. Also I would suggest that the fourth sentence be amended to include the Solid Waste Management Board on the copies of the free day published yearly schedule.

Response: The Agency agrees and will amend 4.14.c.1.

Comment: In 33-1-4 and the definition of residential solid waste for Monthly Free Disposal, we would ask for clarification on the disposal of tires. Waste haulers will soon be required to include waste tires during their customers monthly bulky good pickup per the recent PSC order. Can tires be excluded from Monthly Free Disposal by those eligible for the Free Day disposal?

Response: Amended language already proposed in 4.14.c.8. provides the requested guidance needed for tires and Free Day.

Comment: Add a new paragraph under subsection 4.14.c. requiring free day tonnage to be reported in the monthly tonnage report required by 4.12.b.

Response: The Agency disagrees, since this requirement was reflected in 4.12.b.

4) Definitions

Comment: In subsection 2.52. "Generator" please explain what "or whose act first causes a solid waste to become subject to regulation..." since all solid waste(s) are subject to regulation.

Response: The definition reads as follows "2.52. "Generator" means any person or facility whose act or process produces solid waste, or whose act first causes a solid waste to become subject to regulation." This is standard language used by the Federal Environmental Protection Agency to identify when discarded materials become solid waste, and subject to regulation.

Comment: In subsection 2.128. "Staging Area" that the word "temporary" should be inserted before the word "stored".

Response: The Agency agrees and amended 2.128. accordingly.

Comment: In subsection 2.18. "Bulky Goods" implies that bulky goods are introduced to a solid waste facility for disposal when in fact most are recycled for metals recovery and revenue generation. Therefore, I suggest that before the word "disposal" the words "recycling or" be inserted. Additionally, I would suggest that the definition of bulky goods in 33CSR1 be reasonably consistent with the definition of bulky goods in Legislative Rule Title 150 Series 9, Subparagraph 1.8.b. Public Service Commission.

Response: The Agency agrees and has amended subsection 2.18. accordingly.

Comment: In subsection 2.14. "Best Management Practices" this definition includes schedules of activities and prohibitions, I would suggest alternative language.

Response: The Agency disagrees; this language was taken from 47CSR10 for Agency consistency.

Comment: In subsection 2.6. the definition of "Anomalous Event" should not include action plans.

Response: The Agency agrees and has amended the subsection accordingly.

Comment: In subsection 2.24. "Class D Solid Waste Facility" please clarify the language "and not exceeding the height of the adjacent contour elevation."

Response: The Agency agrees and has amended 2.24. accordingly.

Comment: In subsection 2.37. "Construction Demolition Waste" the term "contaminated solid waste" appears twice.

Response: The Agency has amended 2.37. to delete the second repetition.

Comment: In subsection 2.7. the change to the definition of "applicant" is not appropriate and should match West Virginia Code §22-15-2 (2).

Response: The Agency agrees and has amended the section.

Comment: In subsection 2.128 "Staging Area" the proposed definition would encompass even parked trucks or trailers and would impact areas where hauling companies park or store loaded trucks and trailers. In addition, landfills would be required to identify the location of staging areas on site in areas not designated for disposal. We propose the language be changed to reflect this.

Response: The Agency disagrees, activities at permitted solid waste facilities would not fall under the category of staging areas.

5) Bonding/Financial Assurance

Comment: Under 3.7.j. "Bonding and Financial Assurance", it says that financial assurance must be submitted to DEP, it does not contemplate funding into PSC escrow accounts and it should include those requirements.

Response: The Agency agrees and has amended section 3.7.j. accordingly.

Comment: Under 3.7.j. "Bonding and Financial Assurance" the wording "and any requirements of the West Virginia Public Service Commission" should be deleted as the provisions in the Rule are completely different from the limited jurisdiction the Legislature has granted to the Public Service Commission with regard to landfill regulations.

Response: The Agency disagrees. The DEP and PSC has entered into a memorandum of understanding to prevent any overlap of bonding requirements between the two agencies and this language is provided to clarify the role of the two agencies.

Comment: Under subdivision 3.13. "Bonding and Financial Assurance for Solid Waste Facilities" does not address the current funding obligations/program with the WV public Service Commission of the interagency memo of understanding. Nor does it provide any guidelines for releasing/reducing DEP required bonds as escrow amounts increase. This funding dilemma must be resolved or operators will be required to increase gate rates to recoup these overlapping and duplicative costs.

Response: The Agency agrees and has amended subsection 3.13. accordingly.

Comment: In paragraph 3.14.b.3. "Additional Costs" should end with the phrase ", prior to the issuance of a solid waste facility permit."

Response: The Agency agrees and has amended 3.14.b.3. accordingly.

Comment: In paragraph 3.14.b.3. "Additional Costs" the DEP has proposed that the applicant pay additional costs above and beyond the non-refundable background investigation fee. The WVMA recommends that there be either a maximum dollar limit or a consensus between the DEP and the applicant as to

the scope of additional background investigation required once the initial non-refundable fee amount is reached. The WVMA also questions whether such fees are authorized by statute...

Response: The Agency disagrees, DEP cannot continue to cover the costs associated with background investigations for large companies or for expanding corporations. Statutorily the fees are authorized in West Virginia Code §22-15-5(a).

6) Landfill Construction and Maintenance

Comment: Subparagraphs 4.5.c.2.D., 4.5.c.2.F., and 4.5.c.2.G. have no effective dates. Do changes apply to new designs and/or current in place installations.

Response: The Agency agrees and has made the appropriate amendment to reflect from the effective date of this rule forward.

Comment: Part 4.5.b.1.A.2. modifies the design criteria for temporary stream channel diversions from a 10-year, 24-hour event to a 25-year, 24-hour event. By definition, these drainage structures are "temporary." And therefore, do not warrant being designed for the 25-year event. Designing structures of a temporary nature to the proposed standards is impractical and unnecessary.

Response: The Agency disagrees. Many temporary stream channel diversions are in place for longer than "temporary" would indicate and in many cases become permanent or are in place for many years.

Comments: In subparagraphs 4.5.c.2.D., 4.5.c.2.F., and 4.5.c.2.G., the proposed changes will require that all drainage ditches, culverts and stream crossings associated with access areas be designed to pass the 25-year storm event. We would submit that this rule change is overly restrictive and rather than 25-year, 24-hour storm, we suggest that the minimum requirement for access road ditches and culverts be the 10-year, 24-hour storm event. Access roads to landfill sites are typically set in rural areas of West Virginia, far removed from the landfill's runoff and run-on control systems and waste disposal unit... It is overkill in many landfill access road applications to provide drainage structures for the 25-year event.

Response: The Agency disagrees. "Temporary" drainage structures are required to adhere to the 25-year, 24-hour storm events, therefore the agency believes that structures of a more permanent nature should adhere to these same requirements.

Comment: In subparts 4.5.d.4.A.5.(a) and 4.5.d.6.A.7.(j) requires that leachate collection and detection pipes not within the bounds of a composite lined area be double walled pipe.... A change of his nature will, at the very least, double the construction costs and are not applicable to all design situations.

Response: The Agency did not find any new wording in 4.5.d.4.A.5.(a) or 4.5.d.6.A.7.(j), however the DEP believes the commenter is referring to

4.5.d.4.A.5.(i). The DEP has amended the wording to require double walled pipes only if required by the Secretary.

Comment: In subpart 4.5.d.6.A.7.(j) the WVMA believes that the intent of the DEP in this proposed section is to apply the requirement to leachate "collection" pipes rather than "detection" pipes.

Response: The Agency agrees and has amended 4.5.d.6.A.7.(j) accordingly.

Comment: In subparagraph 4.5.f.3.B. the word "temporarily" was eliminated , which apparently means that disturbed areas that may sit idle for more than 60 days cannot be temporarily revegetated..... Removing this language could mean that any disturbed area requires final revegetation, which is, most of the time, not the case.

Response: The Agency agrees and has amended 4.5.f.3.B. accordingly.

Comment: In Part 4.5.d.5.A.9. some landfills have approval to use "equivalent liner profiles" are these still in effect?

Response: Yes, (The Agency assumes that the commenter was referring to "alternative liner design" under 4.5.d.1.F. instead of "equivalent liner profiles," since that term is not used under 4.5.d.5.A.9. in 33CSR1.)

Comment: Referring to subparagraph 4.10.a.1.C., do current sites have to be retro-fitted with passive vents?

Response: The primary intention of this change is for it to be applied prospectively; however, the Secretary retains the ability to require retrofitting of passive gas systems or other appropriate means to vent gas on a case-by-case basis. The Agency has made the appropriate amendment to clarify 4.10.a.1.C.

Comment: Referring to paragraphs 4.5.g.4. and 4.5.g.5. regarding slope stabilization. It would appear that responsible operators should be allowed to design, implement and monitor this steeper layout of 2.5:1 with benches, with the Department monitoring the results.

Response: The Agency Disagrees. Landfill slopes must comply with the rules at all times. Pursuant to 33CSR1 subparagraph 6.1.e.1.C., and in regard to a responsibly operated facility, only minimal settlement will occur prior to the initiation of closure activities. Further, recent catastrophic events have illustrated that an interim slope may be come final without notice, and subject the DEP to undue financial hardship in the pursuit of it's mission to protect the environment.

Comment: In paragraph 3.2.g.3. "Location Standards for Airport Safety" Please clarify if location standards apply to staging areas, transloading areas, transfer stations, and other solid waste units.

Response: This paragraph only applies to new municipal solid waste landfill facilities.

Comment: In subdivision 3.2.o. "Location Standards for Air Criteria" all structures that are part of the stormwater and sediment/erosion system, that are not a direct part of any earthen embankment relating to a waste unit, should be considered a diversion structure for the purpose of this section for the rule..... Exempting stormwater and sediment/erosion structures for the location requirements will allow more usable land for these structures, increasing their effectiveness and improving maintenance.

Response: The Agency disagrees. However, a heading was added to this section to clarify the content. This is a pre-existing requirement (4.5.g.3. of the current rules) that was just moved to 3.2.o. for consistency.

Comment: In subdivision 3.2.0. "Location Standards for Air Criteria" the proposed section also needs to be clarified in order to address whether ponds would be considered diversion structures, whether ditches that convey sediment water would be considered diversion structures, and whether there would be a distinction between diversion ditches to prevent run-on and diversion ditches to contain run-off. Waste Management recommends that the DEP revise this proposed section to clarify these issues.

Response: The Agency disagrees. This is a pre-existing requirement (4.5.g.3. of the current rules) that was just moved to 3.2.o. for consistency. All surface water diversion structures are considered part of the system and therefore must be subject to the same distance requirements from property boundaries.

Comment: In paragraph 4.5.b.3. "Sediment Control" the rule should allow for reduction of the 0.125 acre-feet per acre of storage if a suitable Best Management Practices Plan and alternative design is approved by the Secretary..... performance of sediment control ponds can be enhanced to function extremely well at a lesser sediment loading design.

Response: The agency disagrees.

Comment: In part 4.5.d.3.A.1. "Sub Base Layer" change moisture requirement to wet of optimum to no greater than five percent (5%). Allow variance in an approved QAQC plan specific to the material in use that insures permeability and structural integrity.

Response: The Agency disagrees. Should conditions warrant, a variance can be requested on an case-by-case basis.

Comment: In subparagraph 6.1.e.1.B. "Gas Vents in Closure" this proposed requirement would best be managed based on age of waste, type of waste, and occurrence of leachate seeps, condition of vegetation, measurements of gas monitoring plan, waste placement procedures and design of final cap. Waste Management suggests that this proposed section be revised to allow the Secretary to waive one (1) gas vent per acre based on age and type of waste and site-specific gas management controls.

Response: The Agency disagrees.

7) General Comments

Comment: The reference made to WV Code in 1.6.c. is incorrect.

Response: The Agency agrees and has made the appropriate amendment.

Comment: Dumpster requirement of 1.6.b. should be changed for those who do not own the dumpster but are required to use it.

Response: The Agency agrees and has changed the language of 1.6.c. to reflect W. Va. Code § 61-3-53.

Comments: In part 3.18.c.3.C.1 Termination – This provision should only apply to “new” facilities.

Response: The Agency agrees and has amended the subparagraph.

Comments: In subdivision 3.27.d. If the permittee has not begun construction within six (6) months the Agency may terminate the permit. This should only apply to new facilities.

Response: The Agency agrees and has amended section 3.27.d. accordingly.

Comment: I would like to see a Table of Contents included at the beginning of the Rule, this would make the Rule user friendly and will enable the reader to more efficiently and effectively utilize this document.

Response: The Agency agrees and will include a table of contents.

Comment: In paragraph 4.12.b.3. the first sentence as written implies that waste from West Virginia does not have to be reported. I suggest deleting the words “other than” and inserting the word “including”. In the second sentence there is a typographical error and the word “the” before the word “tonnage” should be deleted. Additionally, I suggest that there should be a third sentence, which says, “all free-day tonnage must be included in each monthly report.”

Response: The Agency agrees and has amended 4.12.b.3.

Comment: In paragraph 7.5.b. I would suggest after the phrase “West Virginia Division of Highways” inserting the phrase “and the Public Service Commission of West Virginia” because most of the waste-in-transit inspections will be conducted by the Public Service Commission.

Response: The Agency agrees and has amended 7.5.b.1. accordingly.

Comment: In “DEP Proposed Appendix IV Schedule of Solid Waste Facility Permit Application Fees” the second to last category is titled “Modification to Approved Solid Waste Facility” – whereas there are two types of permit modifications, minor and major, it is assumed that this category is referring only to Major Modifications and I suggest that the word “Major” should be inserted before the word “Modification”. Additionally, I would emphasize that a major modification is a significant and time consuming permitting action on both the

permitting staff of DEP and the permittee. Therefore, I would question if the current application fee of \$500 is adequate.

Response: The Agency agrees with the change in language to indicate a major modification and will amend the above referenced appendix accordingly.

However, the Agency does not agree with raising the "major" modification application fee at this time.

Comment: In subdivision 4.12.b. "Solid Waste Tonnage Reports" requiring that they be received by the 20th of the month will lessen the time available by the operator to prepare the documents. Additionally, the operator has no control on the mail handling and delivery problems...that's why post marked by a certain date has always been a regulatory condition. The Solid Waste Authority was left off the list and who is supposed to get the document at the PSC?

Response: The Agency agrees and has amended 4.12.b. accordingly.

Comment: In subdivision 4.12.i. and 4.13.a.3.B. indicates the Secretary may specify the medium other than paper for the transmittal of reports. This request may be technologically difficult to complete for some entities.

Response: Due to Agency restructuring, electronic submittal is standard practice, therefore we are making these changes for Agency consistency.

Comment: In subsection 4.7. we would ask for a ruling on the acceptance of automobile fuel tanks in a landfill and how to prepare a fuel tank for acceptance in a landfill. If an automobile fuel tank needs to be emptied and crushed, can it be done safely by an individual without the use of heavy equipment or compactor?

Response: The Agency believes that the guidelines in the existing rules are clear, if you have additional questions you may contact this office for clarification.

Comment: DEP has proposed that Class F solid waste facilities be subject to those same pre-siting requirements at the discretion of the Secretary.

Response: The Agency disagrees, no language changes were made to this section of the rule except to change director to Secretary due to DEP restructuring. Also all solid waste facilities are subject to the same pre-siting requirements as applicable and required specifically by the Secretary.

Comment: The new language to be inserted in Section 1.6 would require anyone who sends solid waste to a permitted solid waste disposal facility to assure that facility is in compliance with the Act or they, too, would be in violation of the Solid Waste Management Act. Such burden being placed on individual users of solid waste facilities is unreasonable. Compliance assurance is the responsibility of the owner/operator of the permitted facility. As such, the WVMA also recommends that this language be deleted for the proposed Rule.

Response: In subsection 1.6., commercial solid waste facilities are permitted through the DEP. Since commercial facilities are required by the DEP to be permitted facilities no additional burden is placed on the individual. This

provision was put in place to prevent people from disposing solid waste in unapproved areas.

Comment: In subdivision 1.6.a. the proposed new language goes beyond the permit requirement of the Solid Waste Management Act, West Virginia Code §22-15-1, et seq., and exceeds the rule-making authority of DEP....

Response: *This subdivision simply reiterates and consolidates the requirements of the DEP in various articles of Chapter 22 of the Code of West Virginia.*

Comment: In subsection 3.1. "Permitting Requirements" although only minor changes are proposed for this section, it is clear that this section requires compliance with laws other than the Solid Waste Management Act.... It is therefore recommended that these subsection be revised to reference only the Solid Waste Management Act and the State Water Pollution Control Act.

Response: *The Agency disagrees. This division regulates only water and waste but requires compliance with other agency requirements such as Air Quality.*

Comment: In subsection 3.4. the WVMA urges the DEP to retain the word "commercial" in this section. A non-commercial solid waste facility should not have to publish a Class II legal advertisement, etc...

Response: *The Agency agrees and has amended the subsection accordingly.*

Comment: Weirton Steel Corporation proposes sweeping changes to the recycling section of the rule.

Response: *The agency disagrees, no changes were proposed to this section and no time remains for making such additions.*