

**Rules with proposed changes or  
comments from NWRA**

.0103	.0503
.0104	.0504
.0106	.0505
	.0508
.0201	.0509
.0202	.0531
.0203	.0532
	.0533
.0301	.0536
.0302	.0538
	.0539
.0401	.0542

All .1600 rules except .1621, .1629, .1631, .1632

And also .1627, .1628, .1680

.0701

.1105

.1402

.1502

## 15A NCAC 13B .0103 GENERAL CONDITIONS

- (a) All solid waste shall be stored, collected, transported, separated, processed, recycled, recovered, and disposed of in a manner consistent with the requirements of these Rules. The Division of Solid Waste Management is responsible for the enforcement of these Rules.
- (b) No radioactive waste material shall be collected and transported, stored, treated, processed, disposed of or reclaimed, except as specifically authorized by a radioactive material license issued by the Division of Radiation Protection, DEHNR.
- (c) Solid waste shall be disposed of at a solid waste disposal site in accordance with the Solid Waste Management Act and the Federal Act. Hazardous waste, lead acid batteries, liquid waste, including used oil, regulated medical waste, and any other wastes that may pose a threat to the environment or the public health, as determined by the Division, are prohibited from disposal at a solid waste disposal site.
- (d) The Division has developed a "Procedure and Criteria for Waste Determination" which is used to determine whether a waste is:
- (1) hazardous as defined by 15A NCAC 13A, and
  - (2) suitable for disposal at a solid waste management facility. Information required for evaluation includes the identity of the generator, identity of the waste and how it was generated, and laboratory results indicating the chemical constituency of the waste. Copies of "Procedure and Criteria for Waste Determination" may be obtained from and inspected at the Division, P.O. Box 27687, Raleigh, N.C. 27611-7687. The waste determination procedure shall be used for:
    - (A) Waste which is generated outside the population and geographic area which the solid waste management facility is permitted to serve under .0504(1)(g).
    - (B) Waste from a transfer facility other than a facility permitted under these Rules.
    - (C) Waste generated by a new generator inside the population and geographic area which the Solid Waste Management Facility is permitted to serve if the components of the waste cannot be readily determined otherwise.
    - (D) Waste generated through a change in industrial process by an existing generator, provided the components of the waste cannot be readily determined otherwise.
    - (E) A load of waste which a sanitary landfill operator suspects may contain materials which the facility is not permitted to receive.
    - (F) Requests by a generator interested in transporting waste to an identified solid waste management facility for treatment and processing, transfer or disposal.
    - (G) All sludges except sludge from water & Wastewater treatment plants.
    - (H) Other wastes deemed appropriate by the Division for testing before transporting to a solid waste management facility.
- (e) No person shall dispose or cause the disposal of solid waste in or on waters in a manner that results in solid waste's entering waters or being deposited upon lands of the state.
- (f) White Goods shall not be disposed of at a solid waste disposal site after January 1, 1991.
- (g) ~~By July 1, 1991,~~ all solid waste management facilities owned and operated by or on behalf of a local government, ~~except facilities which will receive no waste after July 1, 1992,~~ shall install scales and weigh all solid waste when it is received at the facility.

(h) ~~By July 1, 1991,~~ each local government operating a permitted solid waste management facility shall initiate a solid waste recycling program which shall be designed to achieve the goal of recycling at least 25 percent of the municipal solid waste stream. ~~by January 1, 1993,~~ prior to final disposal or incineration at a solid waste disposal facility.

(i) ~~After January 1, 1998,~~ all active sanitary landfills (except land clearing and inert debris landfills) shall be equipped with liners, leachate collection systems and final cover systems as required in Sections .0500 and .1600 of this Subchapter.

*History Note: Filed as a Temporary Amendment Eff. October 28, 1988, for a Period of 180 Days to Expire on April 26, 1989;*

*Authority G.S. 130A-294;*

*Eff. April 1, 1982;*

*Amended Eff. October 1, 1995; January*

## 15A NCAC 13B .0104 SOLID WASTE STORAGE

(a) The owner or occupant of any property, except that exempted as specified in Rule .0103(c) of this Subchapter shall be responsible for the sanitary storage of all solid waste accumulated on the property.

~~(b) Garbage shall be stored in either durable rust resistant, non-absorbent, water-tight, rodent proof, and easily cleanable containers with a close-fitting fly-tight cover, when applicable, or other types of containers acceptable to the local governing agency and conforming to the intent of this Section.~~

~~(c) Refuse shall be stored in durable containers or as otherwise provided in this Section. Where garbage is stored in combination with refuse, containers shall meet the requirements for garbage containers.~~

~~(d) Hazardous waste shall be stored as prescribed in the applicable state or federal rules.~~

~~(e) All containers for the storage of solid waste shall be maintained in such a manner as to prevent the creation of a nuisance or insanitary conditions. Containers that are broken or otherwise fail to meet this Rule shall be replaced with acceptable containers. Refuse too large or otherwise not suitable for storage in containers shall be stored in a nuisance-free manner consistent with requirements with the unit of local government.~~

(f) All solid waste shall be stored in such a manner as to prevent the creation of a nuisance, insanitary conditions, or a potential public health hazard.

*History Note: Authority G.S. 130A-294;  
Eff. April 1, 1982;  
Amended Eff. February 1, 1988.*

## **15A NCAC 13B .0106 GENERATOR OF SOLID WASTE**

- (a) A solid waste generator shall be responsible for the satisfactory storage, collection and disposal of solid waste to include the proper handling and/or disposal of banned wastes.
- (b) The solid waste generator shall ensure that his waste is disposed of at a site or facility which is permitted to receive the waste.

*History Note: Authority G.S. 130A-294;  
Eff. January 1, 1985.*

## **SECTION .0200 - PERMITS FOR SOLID WASTE MANAGEMENT FACILITIES**

Rules .0201 - .0205 of Title 15A Subchapter 13B of the North Carolina Administrative Code (T15A.13B .0201 - .0205); have been transferred and recodified from Rules .0201 - .0205 of Title 10 Subchapter 10G of the North Carolina Administrative Code (T10.10G .0201 - .0205), effective April 4, 1990.

### **15A NCAC 13B .0201 PERMIT REQUIRED**

(a) No person shall treat, process, store, or dispose of solid waste or arrange for the treatment, processing, storage or disposal of solid waste except at a solid waste management facility permitted by the Division for such activity, except as provided in G.S. 130A-294(b).

(b) No person shall cause, suffer, allow, or permit the treatment, storage, or processing of solid waste upon any real or personal property owned, operated, leased, or in any way controlled by that person without first obtaining a permit for a solid waste management facility from the Division authorizing such activity, except as provided in G.S. 130A-294(b). We would like to suggest that the solid waste section work with other sections to assure that land farms be required to comply with these rules as well.

(c) No solid waste management facility shall be established, operated, maintained, constructed, expanded or modified without an appropriate and currently valid permit issued by the Division. It is the responsibility of every owner and operator of a proposed solid waste management facility to apply for a permit for the facility. The term "owner" shall include record owners of the land where the facility is located or proposed to be located and holders of any leasehold interest, however denominated, in any part of the land or structures where the facility is located or proposed to be located.

(d) The solid waste management facility permit, except for land clearing and inert debris permits, shall have two parts, as follows:

(1) A permit to construct a solid waste management facility shall be issued by the Division after site and construction plans have been approved and it has been determined that the facility can be operated in accordance with Article 9 of Chapter 130A and the applicable rules set forth in this Subchapter, and other applicable state, federal and local laws. An applicant shall not clear or grade land or commence construction for a solid waste management facility until a construction permit has been issued.

(2) A permit to operate a solid waste management facility may not be issued unless it has been determined that the facility has been constructed in accordance with the construction permit, that any pre-operative conditions of the construction permit have been met, and that the construction permit has been recorded, if applicable, in accordance with Rule .0204 of this Section.

(e) Land clearing and inert debris facilities may be issued a combined permit to construct and operate the facility.

(f) Land clearing and inert debris facilities subject to Rule .0563 Item (1) may construct and operate after notification as provided for under Rule .0563 Item (2).

~~(g) Permits, including those issued prior to the effective date of this Rule, shall be reviewed every five years.~~ Modifications of permits, where necessary, shall be made in accordance with rules in effect at the time of review for those areas of a permitted sanitary landfill site which have not previously received solid waste.

(h) All solid waste management facilities shall be operated in conformity with these Rules and in such a manner as to prevent the creation of a nuisance, unsanitary conditions, or potential public health hazard.

*History Note: Authority G.S. 130A-294;*

*Eff. April 1, 1982;*

*Amended Eff. January 4, 1993; February 1, 1991; March 1, 1988;*

*Filed as a Temporary Amendment Eff. May 19, 1993 to expire on October 9, 1993 or until the permanent rule becomes effective, whichever is sooner;*

*Temporary Amendment Expired Eff. October 9, 1993;*

*Amended Eff. August 1, 2008.*

## 15A NCAC 13B .0202 PERMIT APPLICATION

(a) Application for permits required by Rule .0201 of this Section shall be forwarded to the Department of Environment ~~Quality, Health, and Natural Resources~~, Division of Solid Waste Management, Solid Waste Section, Post Office Box 27687, Raleigh, North Carolina 27611.

Permit applications shall contain the following information:

(1) Site and construction plans;

(2) An approval letter from the unit of local government having zoning authority over the area where the facility is to be located stating that the proposed facility meets all of the requirements of the local zoning ordinance, or that the site is not zoned;

(3) Detailed plans and specifications for solid waste management facilities shall be prepared by a professional engineer except for land clearing and inert debris landfills subject to Rule .0563(1) of this Subchapter. The plans shall bear an imprint of the registration seal of the engineer and geological studies shall bear the seal of a licensed professional geologist, in accordance with N.C.G.S. Chapter 89E; and

~~(4) Any other information pertinent to the proposed facility.~~

(b) Specific information for a permit application is found in Sections .0300, .0400 and .0500 of this Subchapter.

*History Note: Authority G.S. 130A-294;*

*Eff. April 1, 1982;*

*Amended Eff. January 4, 1993; February 1, 1991; September 1, 1990; August 1, 1988.*



## 15A NCAC 13B .0203 PERMIT APPROVAL OR DENIAL

- (a) Upon receipt of a permit application, the Division shall review the request to assure that all provisions of these Rules, the Solid Waste Management Act, and the Federal Act, will be met. (Completeness review within 30 days of receipt). Based on its review, the Division shall either approve or deny the request in writing within 90 days of receipt of a complete application.
- (b) When an application is approved, the applicant shall be provided a permit. Permits shall be effective for the design and operational life of the facility.- If the approval is contingent upon certain conditions being met by the applicant, such conditions shall be noted on the permit.
- (c) Before receiving solid waste at a newly permitted facility, an inspection shall be made by a representative of the Division to assure that the site is prepared in accordance with the permit, and the permit shall be recorded with the Register of Deeds in the county where the facility is located in accordance with the recordation requirements set out in 15A NCAC 13B .0204.
- (d) By receiving solid waste at a permitted facility, the permittee(s) shall be considered to have accepted the conditions of the permit and shall comply with the conditions of the permit.
- (e) When the Division denies a permit for a solid waste management facility, it shall state in writing the reason for such denial and shall also state its estimate of the changes in the applicant's proposed activities or plans which will be required in order that the applicant may obtain a permit. A denial shall be without prejudice to the submission of a future application for a permit after revisions are made to meet objections specified as reasons for denial. Reasons for denial include:
- (1) Submission of incomplete information;
  - (2) Failure to meet applicable requirements of this Subchapter; or
  - (3) Failure to meet any applicable requirement or standard set forth in Article 9 of Chapter 130A of the N.C. General Statutes; or
  - (4) Any other reasons which would prevent the solid waste facility or site from being operated in accordance with Article 9, Chapter 130A of the General Statutes, these Rules, the Federal Act, or acceptable engineering or public health and environmental standards.
- (f) Appeals of permit decisions shall be in accordance with Article 3 of N.C.G.S., Chapter 150B, and the Rules adopted thereunder.

*History Note: Authority G.S. 130A-294;  
Eff.*

## **SECTION .0300 - TREATMENT AND PROCESSING FACILITIES**

Rules .0301 -.0302 of Title 15A Subchapter 13B of the North Carolina Administrative Code (T15A.13B .0301 -.0302); have been transferred and recodified from Rules .0301 -.0302 of Title 10 Subchapter 10G of the North Carolina Administrative Code (T10.10G .0301 -.0302), effective April 4, 1990.

### **15A NCAC 13B .0301 APPLICATION REQUIREMENTS**

This Rule contains the information required for a permit application for each treatment and processing facility. A minimum of three sets of the following information shall be required in each application:

- (1) Site and operation plans;
- (2) An approval letter from the unit of local government having zoning authority over the area where the facility is to be located, stating that the proposed facility meets all of the requirements of the local zoning ordinance, or that the site is not zoned; and
- ~~(3) Any other information pertinent to the proposed facility.~~

*History Note: Authority G.S. 130A-294;  
Eff. April 1, 1982;  
Amended Eff. February 1, 1991.*

## 15A NCAC 13B .0302 OPERATIONAL REQUIREMENTS

Any person who maintains or operates a treatment and processing facility shall maintain and operate the facility in accordance with the following practices unless otherwise specified in the permit:

- (1) Operational plans shall be approved and followed as specified for the facility;
- (2) A facility shall only accept wastes which it is permitted to receive;
- (3) Water that comes in contact with solid waste excluding processed materials will be contained on-site or properly treated prior to discharge from the site. A NPDES permit may be required prior to discharge to surface waters;
- (4) Equipment for fire control shall be available;
- (5) Effective vector control measures shall be applied to control flies, rodents, and other insects or vermin;
- (6) Equipment shall be provided in the storage and charging areas and elsewhere as needed or as may be required in order to maintain the facility in a sanitary condition; and
- (7) Appropriate methods shall be provided to confine material subject to be blown by the wind within the area. At the conclusion of each day of operation, all windblown material resulting from the operation shall be collected and returned to the area by the owner or operator.

*History Note: Authority G.S. 130A-294;  
Eff. April 1, 1982.*

## SECTION .0400 - TRANSFER FACILITIES

Rules .0401 -.0402 of Title 15A Subchapter 13B of the North Carolina Administrative Code (T15A.13B .0401 -.0402); have been transferred and recodified from Rules .0401 -.0402 of Title 10 Subchapter 10G of the North Carolina Administrative Code (T10.10G .0401 -.0402), effective April 4, 1990.

### 15A NCAC 13B .0401 APPLICATION REQUIREMENTS

This Rule contains the information required for a permit application for each transfer facility. A minimum of three sets of the following information shall be required in each application:

- (1) Site and operation plans;
- (2) An approval letter from the unit of local government having zoning authority over the area where the facility is to be located, stating that the proposed facility meets all of the requirements of the local zoning ordinance, or that the site is not zoned; and
- ~~(3) Any other information pertinent to the proposed facility.~~

*History Note: Authority G.S. 130A-294;  
Eff. April 1, 1982;  
Amended Eff. February 1, 1991.*

## **15A NCAC 13B .0503 SITING AND DESIGN REQUIREMENTS FOR DISPOSAL SITES**

Disposal sites shall comply with the following requirements in order for a permit to be issued:

- (1) A site shall meet the following siting requirements:
  - (a) A site located in a floodplain shall not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain or result in washout of solid waste so as to pose a hazard to human life, wildlife or land or water resources.
  - (b) A site shall be located in consideration of the following:
    - (i) a site shall not cause or contribute to the taking of any endangered or threatened species of plants, fish or wildlife;
    - (ii) a site shall not result in the destruction or adverse modification of the critical habitat of endangered or threatened species as identified in 50 C.F.R. Part 17 which is hereby incorporated by reference including any subsequent amendments and editions. This information is available for inspection at the Department of Environment, Health, and Natural Resources, Division of Solid Waste Management, 401 Oberlin Road, Raleigh, North Carolina 27605 where copies can be obtained at no cost;
    - (iii) a site shall not damage or destroy an archaeological or historical site; and
    - (iv) a site shall not cause an adverse impact on a state park, recreation or scenic area, or any other lands included in the state nature and historic preserve.
  - (c) A new site disposing of putrescible wastes shall not be located within 10,000 feet of an airport runway used by turbojet aircraft or within 5,000 feet of an airport runway used by piston-type aircraft; and N/A since Sanitary Landfills and 500 rules are replaced by 1600 rules. This whole section 500 needs to be evaluated with this idea in mind. Sanitary Landfills no longer exist.
  - (d) A site shall have available adequate suitable soils for cover either on-site or from off-site.
- (2) A site shall meet the following design requirements:
  - (a) The concentration of explosive gases generated by the site shall not exceed:
    - (i) twenty-five percent of the limit for the gases in site structures (excluding gas control or recovery system components); and
    - (ii) the lower explosive limit for the gases at the property boundary;
  - (b) A site shall not allow uncontrolled public access so as to expose the public to potential health and safety hazards at the disposal site;
  - (c) A site shall meet the following surface water requirements:
    - (i) A site shall not cause a discharge of pollutants into waters of the state that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES), under Section 402 of the Clean Water Act, as amended, or that is in violation of standards promulgated under G.S. 143-214.1 and G.S. 143-215;
    - (ii) A site shall not cause a discharge of dredged material or fill material into waters of the state that is in violation of the requirements under Section 404 of the

Clean Water Act, as amended, or that is in violation of any state requirements regulating the discharge of dredged or fill material into waters of the state, including wetlands; and

(iii) A site shall not cause non-point source pollution of waters of the state that violates assigned water quality standards.

(d) A site shall meet the following ground water requirements:

(i) A site, except for land clearing and inert debris landfills subject to Rule .0564(8)(e) of this Section, shall be designed so that the bottom elevation of solid waste will be a minimum of four feet above the seasonal high water table;

(ii) Operators of new industrial solid waste landfills, lateral expansions of existing d waste landfills, and industrial solid waste landfills receiving solid waste on or after January 1, 1998 shall submit to the Division a design which satisfies one of the following criteria:

(A) a design that will ensure that the ground water standards established under 15A NCAC 2L will not be exceeded in the uppermost aquifer at the compliance boundary established by the Division in accordance with 15A NCAC 2L. The design shall be based upon modeling methods acceptable to the Division, which shall include, at a minimum, the following factors:

(I) the hydrogeologic characteristics of the facility and surrounding lands;

(II) the climatic factors of the area; and

(III) the volume and physical and chemical characteristics of the leachate;

or

(B) a design with a leachate collection system, a closure cap system, and a composite liner system consisting of two components: the upper component shall consist of a minimum 30-ml flexible membrane (FML), and the lower components shall consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than  $1 \times 10^{-7}$  cm/sec. FML components consisting of high density polyethylene (HDPE) shall be at least 60-ml thick.

The FML component shall be installed in direct and uniform contact with the compacted soil component.

(iii) The Division reserves the right to require an applicant to submit a liner design if the groundwater protection demonstration is Sub-item (ii) of this Paragraph is not satisfactory.

(iv) Industrial solid waste landfills shall comply with ground water standards established under 15A NCAC 2L at the compliance boundary.

(e) A site shall not engage in open burning of solid waste;

(f) A site, except a land clearing and inert debris landfill, shall meet the following buffer requirements:

(i) A 50-foot minimum buffer between all property lines and disposal areas;

(ii) A 500-foot minimum buffer between private dwellings and wells and disposal areas; and

(iii) A 50-foot minimum buffer between streams and rivers and disposal areas; and

(g) Requirements of the Sedimentation Pollution Control Law (15A NCAC 4) shall be met.

*History Note: Authority G.S. 130A-294; Eff. April 1, 1982; Amended Eff. October 1, 1995;  
January 4, 1993; February 1, 1991; September 1, 1990.*

**15A NCAC 13B .0504 APPLICATION REQUIREMENTS FOR SANITARY LANDFILLS** **Rename this section to reflect appropriate landfills as Sanitary Landfills no longer exist.**

A permit for a sanitary landfill shall be based upon a particular stream of identified waste, as set forth in Rule .0504(1)(g)(i) and (ii) of this Section. Any substantial change in the population or area to be served, or in the type, quantity or source of waste shall require a new permit and operation plan, including waste determination procedures where appropriate.

(1) The following information shall be required for reviewing a site application for a proposed sanitary landfill:

(a) An aerial photograph on a scale of at least 1 inch equals 400 feet showing the area within one-fourth mile of the proposed site's boundaries with the following specifically identified:

- (i) Entire property owned or leased by the person proposing the disposal site;
- (ii) Land use and zoning;
- (iii) Location of all homes, industrial buildings, public or private utilities, and roads;
- (iv) Location of wells, watercourses, dry runs, and other applicable details regarding the general topography; and
- (v) Flood plains.

(b) A map on a scale of at least 1 inch equals 1000 feet showing the area within two miles of the proposed site's boundaries with the following specifically identified:

- (i) Known ground water users;
- (ii) Potential or existing sources of ground water and surface water pollution;
- (iii) Water intakes;
- (iv) Airport and runways; and
- (v) Subdivisions.

(c) A geological and hydrological study of the site which provides:

(i) Soil borings for which the numbers and depths have been confirmed by the Division and lab testing of selected soil samples that provide:

- (A) standard penetration resistance;
- (B) particle size analysis;
- (C) soil classification Unified Soil Classification System;
- (D) geologic considerations (slopes, solution features, etc.);
- (E) undisturbed representative geologic samples of the unconfined or confined or semiconfined hydrological units within a depth of 50 feet that provide the following information for each major lithologic units:

- (I) saturated hydraulic conductivity (or by in situ);
- (II) volume percent water; and
- (III) porosity;

(F) remolded sample of cover soils that provide:

- (I) saturated hydraulic conductivity,
- (II) total porosity,
- (III) atterberg limits;



- (G) stratigraphic cross sections identifying hydrogeological units including lithology;
  - (H) tabulation of water table elevations at time of boring, 24 hours, and seven days (The number of cased borings to provide this information shall be confirmed by the Division.); and
  - (I) boring logs;
    - (ii) A boundary plat locating soil borings with accurate horizontal and vertical control which are tied to a permanent onsite bench mark;
    - (iii) A potentiometric map of the surficial aquifer based on stabilized water table elevations; and
    - (iv) A report summarizing the geological and hydrological evaluation.
  - (d) A conceptual design plan presenting special engineering features or considerations which must be included or maintained in site construction, operation, maintenance and closure.
  - (e) Local government approvals:
    - (i) If the site is located within an incorporated city or town, or within the extra-territorial jurisdiction of an incorporated city or town, the approval of the governing board of the city or town shall be required. Otherwise, the approval of the Board of Commissioners of the county in which the site is located shall be required. Approval may be in the form of either a resolution or a vote on a motion. A copy of the resolution, or the minutes of the meeting where the vote was taken, shall be forwarded to the Division.
    - (ii) A letter from the unit of government having zoning jurisdiction over the site which states that the proposal meets all of the requirements of the local zoning ordinance, or that the site is not zoned.
  - (f) A discussion of compliance with siting standards in Rule .0503(1) of this Subchapter.
  - (g) A report indicating the following:
    - (i) population and area to be served;
    - (ii) type, quantity and source of waste;
    - (iii) the equipment that will be used for operating the site;
    - (iv) a proposed groundwater monitoring plan including well location and schematics showing proposed screened interval, depth and construction; and
    - (v) a more detailed geologic report may be required depending on specifics of the site. This report may be based on physical evidence, initially, or due to information obtained from the site plan application.
  - (h) Any other information pertinent to the suitability of the proposed site.
- (2) The following information shall be required for reviewing a construction plan application for a proposed sanitary landfill:
- (a) A map showing existing features to include:
    - (i) existing topography of the site on a scale of at least 1 inch equals 200 feet with five foot contours;
    - (ii) bench marks;
    - (iii) springs;

- (iv) streams;
  - (v) potential ground water monitoring sites;
  - (vi) pertinent geological features; and
  - (vii) soil boring locations.
- (b) A grading plan that provides:
- (i) proposed excavated contours;
  - (ii) soil boring locations;
  - (iii) locations and elevations of dikes or trenches;
  - (iv) designated buffer zones;
  - (v) diversion and controlled removal of surface water from the work areas; and
  - (vi) proposed utilities and structures.
- (c) A construction plan that provides:
- (i) engineering design for liners, leachate collections systems;
  - (ii) proposed final contours showing removal of surface water runoff; and
  - (iii) locations of slope drains or other drop structures.
- (d) An erosion control plan that identifies the following:
- (i) locations of temporary erosion control measures (sediment basins, stone filters, terraces, silt fences, etc.);
  - (ii) locations of permanent erosion control measures (rip rap, energy dissipators, ditch stabilization, pipe drain, etc.); and
  - (iii) seeding specifications and schedules.
- (e) Engineering diagrams showing typical sections of:
- (i) dikes,
  - (ii) trenches,
  - (iii) diversions, and
  - (iv) sediment basins.
- (f) A minimum of two cross sections per operational area showing:
- (i) original elevations,
  - (ii) proposed excavated depths,
  - (iii) proposed final elevations,
  - (iv) ground water elevation, and
  - (v) soil borings.
- (g) Site development showing phases or progression of operation in five-year or ten-year phases of construction and operation.
- (h) A written report that contains the following:
- (i) A copy of the deed or other legal description of the landfill site that would be sufficient as a description in an instrument of conveyance and property owner's name;
  - (ii) Name of individual responsible for operation and maintenance of the site;
  - (iii) Projected use of land after completion of the sanitary landfill;
  - (iv) Anticipated lifetime of the project;
  - (v) Description of systematic usage of area, operation, orderly development and completion of the sanitary landfill;
  - (vi) Earthwork calculations;
  - (vii) Seeding specifications and schedules;
  - (viii) Calculations for temporary and permanent erosion control measures;

- (ix) Any narrative necessary to describe compliance with the Sedimentation Pollution Control Act of 1973 (15A NCAC 4);
- (x) A discussion of compliance with design requirements in Rule .0503(2) of this Section.

*History Note: Authority G.S. 130A 294;*

*Eff. April 1, 1982;*

*Amended Eff. January 1, 1985;*

*Temporary Amendment Eff. October 1, 1987, For a Period of 180 Days to expire on March 29, 1988;*

*Amended Eff. July 1, 2013; February 1, 1991; September 1, 1990; March 1, 1988.*

**15A NCAC 13B .0505 OPERATIONAL REQUIREMENTS FOR SANITARY LANDFILLS** **Rename this section to reflect appropriate landfills as Sanitary Landfills no longer exist.**

Any person who maintains or operates a sanitary landfill site shall maintain and operate the site in conformance with the following practices, unless otherwise specified in the permit:

- (1) Plan and Permit Requirements
  - (a) Construction plans shall be approved and followed.
  - (b) Specified monitoring and reporting requirements shall be met.
- (2) Spreading and Compacting Requirements
  - (a) Solid waste shall be restricted into the smallest area feasible.
  - (b) Solid waste shall be compacted as densely as practical into cells.
- (3) Cover Requirements
  - (a) Solid waste shall be covered after each day of operation, with a compacted layer of at least six inches of suitable cover or as specified by the Division.
  - (b) Areas which will not have additional wastes placed on them for 12 months or more, but where final termination of disposal operations has not occurred, shall be covered with a minimum of one foot of intermediate cover.
  - (c) After final termination of disposal operations at the site or a major part thereof, or upon revocation of a permit, the area shall be covered with at least two feet of suitable compacted earth.
- (4) Erosion Control Requirements
  - (a) Adequate erosion control measures shall be practiced to prevent silt from leaving the site.
  - (b) Adequate erosion control measures shall be practiced to prevent excessive on-site erosion.
- (5) Drainage Control Requirements
  - (a) Surface water shall be diverted from the operational area.
  - (b) Surface water shall not be impounded over or in waste.
  - (c) Completed areas shall be adequately sloped to allow surface water runoff in a controlled manner.
- (6) Vegetation Requirements
  - (a) Within six months after final termination of disposal operations at the site or a major part thereof or upon revocation of a permit, the area shall be stabilized with native grasses.
  - (b) Temporary seeding will be utilized as necessary to stabilize the site.
- (7) Water Protection Requirements
  - (a) The separation distance of four feet between waste and water table shall be maintained unless otherwise specified by the Division in the permit.
  - (b) Solid waste shall not be disposed of in water.
  - (c) Leachate shall be contained on site or properly treated prior to discharge. An NPDES permit may be required prior to the discharge of leachate to surface waters.
- (8) Access and Security Requirements

- (a) The site shall be adequately secured by means of gates, chains, berms, fences, and other security measures approved by the Division, to prevent unauthorized entry.
- (b) An attendant shall be on duty at the site at all times while it is open for public use to ensure compliance with operational requirements.
- (c) The access road to the site shall be of all-weather construction and maintained in good condition.
- (d) Dust control measures shall be implemented where necessary.

(9) Sign Requirements

- (a) Signs providing information on dumping procedures, the hours during which the site is open for public use, the permit number and other pertinent information shall be posted at the site entrance.
- (b) Signs shall be posted stating that no hazardous or liquid waste can be received without written permission from the Division.
- (c) Traffic signs or markers shall be provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient operating conditions.

(10) Safety Requirements

- (a) Open burning of solid waste is prohibited.
- (b) Equipment shall be provided to control accidental fires or arrangements shall be made with the local fire protection agency to immediately provide fire-fighting services when needed.
- (c) Fires that occur at a sanitary landfill shall be reported to the Division within 24 hours and a written notification shall be submitted within 15 days.
- (d) The removal of solid waste from a sanitary landfill is prohibited unless the owner/operator approves and the removal is not performed on the working face.
- (e) Barrels and drums shall not be disposed of unless they are empty and perforated sufficiently to ensure that no liquid or hazardous waste is contained therein.

(11) Waste Acceptance and Disposal Requirements

- (a) A site shall only accept those solid wastes which it is permitted to receive. The landfill operator shall notify the Division within 24 hours of attempted disposal of any waste the landfill is not permitted to receive, including waste from outside the area the landfill is permitted to serve.
- (b) No hazardous or liquid waste shall be accepted or disposed of in a sanitary landfill.
- (c) Spoiled foods, animal carcasses, abattoir waste, hatchery waste, and other animal waste delivered to the disposal site shall be covered immediately.
- (d) Asbestos waste that is packaged in accordance with 40 CFR 61, which is adopted by reference in accordance with G.S. 150B-14(c), may be disposed of separate and apart from other solid wastes at the bottom of the working face or in an area not contiguous with other disposal areas, in either case, in virgin soil. Separate areas shall be clearly marked so that asbestos is not exposed by future land-disturbing activities. The waste shall be covered immediately with soil in a manner that will not cause airborne conditions. Copies of 40 CFR 61 may be obtained and inspected at the Division.

(e) Wastewater treatment sludges may only be used as a soil conditioner and incorporated into the final two feet of cover. Sludges shall be examined for acceptance by Waste Determination procedures in Rule .0103(e) of this Subchapter.

(12) Miscellaneous Requirements

(a) Effective vector control measures shall be applied to control flies, rodents, and other insects or vermin when necessary.

(b) Appropriate methods such as fencing and diking shall be provided within the area to confine solid waste subject to be blown by the wind. At the conclusion of each day of operation, all windblown material resulting from the operation shall be collected and returned to the area by the owner or operator.

*History Note: Filed as a Temporary Amendment Eff. November 1, 1987, For a Period of 180 Days to Expire on April 28, 1988;*

*Authority G.S. 130A-294;*

*Eff. April 1, 1982;*

*Amended Eff. September 1, 1990; February 1, 1988; January 1, 1985.*

## **15A NCAC 13B .0508 APPLICATION REQUIREMENTS FOR INCINERATORS**

Five sets of plans shall be required for each application.

- (1) Site and operation plans of the proposed incinerator;
- (2) A copy of the air quality permit application to the Division of Environmental Management, Department of Environment, Health and Natural Resources;
- (3) An approval letter from the unit of local government having zoning authority over the area where the facility is to be located stating that the site meets all of the requirements of the local zoning ordinance, or that the site is not zoned; and
- (4) The type, quantity and source of waste for incineration disposal.
- (5) Residual Management Plan.

*History Note: Authority G.S. 130A-294;*

*Eff. April 1, 1982;*

*Amended Eff. February 1, 1991; September 1, 1990.*

### **15A NCAC 13B .0509 OPERATIONAL REQUIREMENTS FOR INCINERATORS**

Any person who maintains or operates an incinerator shall maintain and operate the site in conformance with the following practices, unless otherwise specified in the permit:

- (1) All incinerators shall be designed and operated in a manner so as to prevent the creation of a nuisance or potential health hazard;
- (2) The incinerator plant shall be so situated, equipped, operated, and maintained as to minimize interference with other activities in the area;
- (3) All solid waste to be disposed of at the site shall be confined to the dumping area. Adequate storage facilities shall be provided;
- (4) Effective vector control measures shall be applied to control flies, rodents, and other insects or vermin;
- (5) Equipment shall be provided in the storage and charging areas and elsewhere as needed or as may be required in order to maintain the plant in a sanitary condition;
- (6) All residue from the incinerator plant shall be promptly disposed of at an approved Subtitle D sanitary landfill site;
- (7) An air quality permit issued by the Division of Environmental Management, Department of Environment, Health, and Natural Resources, shall be obtained prior to operation;
- (8) A site shall only accept those solid wastes which it is permitted to receive; and
- (9) Water that comes into contact with solid waste will be contained on-site or properly treated prior to discharge. A NPDES permit may be required prior to discharge to surface waters.

*History Note: Authority G.S. 130A-294;  
Eff. April 1, 1982;  
Amended Eff. September 1, 1990.*



## **15A NCAC 13B .0531 PURPOSE, SCOPE, AND APPLICABILITY FOR CONSTRUCTION AND DEMOLITION LANDFILLS**

(a) Purpose. The purpose of Rules .0531 through .0547 of this Section is to regulate the siting, design, construction, operation, closure and post-closure of all construction and demolition solid waste landfill (C&DLF) facilities and units.

(b) Scope. Rules .0531 through .0547 of this Section describe the performance standards, application requirements, and permitting procedures for all C&DLF facilities and units. Rules .0531 through .0547 of this Section are intended to:

- (1) establish the State standards for C&DLF facilities and units to provide for effective disposal practices and protect the public health and environment; and
- (2) coordinate other State Rules applicable to landfills.

(c) Applicability. Owners and operators of C&DLF facilities and units must conform to the requirements of Rules .0531 through .0547 of this Section as follows:

- (1) C&DLF units permitted to operate prior to January 1, 2007, and which do not receive solid waste after June 30, 2008, must comply with the Conditions of the Solid Waste Permit and Rule .0510 of this Section.
- (2) C&DLF units permitted to operate prior to January 1, 2007, and which continue to receive waste after June 30, 2008, must comply with Rule .0547 of this Section, at the time of closure of the unit(s).
- (3) C&DLF units permitted after December 31, 2006 must comply with the requirements of Rules .0531 through .0546 of this Section.

(d) Owners and operators of a C&DLF facility must comply with any other applicable Federal, State and Local laws, rules, regulations, or other requirements.

*History Note: Authority G.S. 130A-294;  
Eff. January 1, 2007.*

*DEQ needs to address dates that have passed.*

## 15A NCAC 13B .0532 DEFINITIONS FOR C&DLF FACILITIES

This Rule contains definitions for terms that appear throughout the Rules pertaining to Construction and Demolition Landfills, Rules .0531 through .0547 of this Section; additional definitions appear in the specific Rules to which they apply.

- (1) "100-year flood" means a flood that has a one-percent or greater chance of recurring in any given year or a flood of a magnitude equaled or exceeded once in 100 years on average over a significantly long period.
- (2) "Active life" means the period of operation beginning with the initial receipt of C&D solid waste and ending at completion of closure activities in accordance with Rule .0543 of this Section.
- (3) "Active portion" means that part of a facility or unit(s) that has received or is receiving wastes and that has not been closed in accordance with Rule .0543 of this Section.
- (4) "Aquifer" means a geological formation, group of formations, or portion of a formation capable of yielding ground water.
- (5) "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 C&DLF unit(s), because of natural or man-induced events, results in the downslope transport of soil and rock material by means of gravitational influence. Areas of mass movement include, but are not limited to, landslides, avalanches, debris slides and flows, soil fluctuation, block sliding, and rock fall.
- (6) "Base liner system" means the liner system installed on the C&DLF unit's foundation to control the flow of leachate.
- (7) "Cap system" means a liner system installed over the C&DLF unit(s) to minimize infiltration of precipitation and contain the wastes.
- (8) "C&D solid waste" means solid waste generated solely from the construction, remodeling, repair, or demolition operations on pavement and buildings or structures. C&D waste does not include municipal and industrial wastes, ~~that may be generated by the on-going operations at buildings or structures.~~
- (9) "Ground water" means water below the land surface in a zone of saturation.
- (10) "Hazardous Waste" means a solid waste as defined in G.S.130A-290 (a)(8). "Hazardous Waste" does not include those solid wastes excluded from regulation pursuant to 40 CFR 261.4, incorporated by reference in 15A NCAC 13A .0106. "Hazardous Waste" does include hazardous waste generated by conditionally exempt small quantity generators as defined in 40 CFR 261.5, incorporated by reference in 15A NCAC 13A .0106.
- (11) "Industrial solid waste" means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of RCRA. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation

Commented [A1]: Change definition of C&D to match SC Regulations.

equipment; and water treatment. This term does not include mining waste or oil and gas waste.

(12) "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.

(13) "Landfill facility" means all contiguous land and structures, waste management unit(s), other appurtenances, and improvements on the land within the legal description of the site included in or proposed for the Solid Waste Permit. Existing facilities are those facilities which were permitted by the Division prior to December 31, 2006. Facilities permitted on or after January 1, 2007 are new facilities.

(14) "Landfill unit" means a discrete area of land or an excavation that receives a particular type of waste such as C&D, industrial, or municipal solid waste, and is not a land application unit, surface impoundment, injection well, or waste pile, as defined under 40 CFR Part 257. Such a landfill unit may be publicly or privately owned, may be located at a MSWLF, an industrial landfill facility, or other waste management facility.

(15) "Lateral expansion" means a horizontal expansion of the waste boundaries of an existing C&DLF unit(s).

(16) "Liner system" means an engineered environmental control system which can incorporate filters, drainage layers, compacted soil liners, geomembrane liners, piping systems, and connected structures.

(17) "Liquid waste" means any waste material that is determined to contain "free liquids" as defined by Method 9095 (Paint Filter Liquids Test), S.W. 846.

(18) "Licensed Geologist" means an individual who is licensed to practice geology in accordance with G.S. 89E.

(19) "Open burning" means the combustion of any solid waste without:

- (a) control of combustion air to maintain adequate temperature for efficient combustion;
- (b) containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion; and
- (c) control of the emission of the combustion products.

(20) "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 C&DLF unit(s).

(21) "Professional Engineer" means an individual who is licensed to practice engineering in accordance with G.S. 89C.

(22) "Project engineer" means the official representative of the permittee who is licensed to practice engineering in the State of North Carolina, who is responsible for observing, documenting, and certifying that activities related to the quality assurance of the construction of the solid waste management unit conforms to the Division approved plan, the permit to construct and the rules specified in this Section. All certifications must bear the seal and signature of the professional engineer and the date of certification.

(23) "Registered Land Surveyor" means an individual who is licensed to practice surveying in accordance with G.S. 89C.

(24) "Run-off" means any rainwater that drains over land from any part of a facility or unit.

(25) "Run-on" means any rainwater that drains over land onto any part of a facility.

(26) "Structural components" means liners, leachate collection systems, final covers, run-on or run-off systems, and any other component used in the construction and operation of the C&DLF that is necessary for protection of human health and the environment.

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

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

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

*History Note: Authority G.S. 130A-294;  
Eff. January 1, 2007.*

## **15A NCAC 13B .0533 GENERAL APPLICATION REQUIREMENTS AND PROCESSING FOR C&DLF FACILITIES**

(a) Applicability. Owners or operators of a proposed or existing C&DLF unit or facility shall submit an application document as detailed in Rule .0535 of this Section in accordance with the criteria and scheduling requirements set forth as follows:

(1) New facility. Owners or operators proposing to establish a C&DLF facility or unit in accordance with the following criteria shall submit a Site Study and subsequently an application for a permit to construct as set forth in Paragraph (a) of Rule .0535 of this Section. A new facility permit application is required when:

(A) The owner or operator proposes to establish a new facility not previously permitted by the Division.

(B) The owner or operator proposes to expand the landfill facility in order to expand the C&DLF unit(s) boundary approved in accordance with Subparagraph (a)(1) of Rule .0536 of this Section.

(2) Amendment to the permit. For any subsequent phase of landfill development the owner or operator shall prepare an application to amend the permit to construct in accordance with Paragraph (b) of Rule .0535 of this Section and submit the application at the earlier of the following dates:

(A) at least 180 days prior to the date scheduled for commencing construction; or

(B) five years from the issuance date of the initial permit to operate or as specified in the effective permit.

(3) Substantial amendment to the permit. A permit issued in accordance with Paragraph (c) of this Rule approves a facility plan for the life of the C&DLF facility and a set of plans for the initial phase of landfill development. The owner or operator shall prepare an application in accordance with Paragraph (c) of Rule .0535 of this Section and submit the application when there is:

(A) a substantial change in accordance with N.C.G.S. 130A-294 (b1)(1); or

(B) a proposed transfer of ownership of the C&DLF facility.

(4) Modifications to the permit. An owner or operator proposing changes to the plans approved in the permit shall request prior approval from the Division in accordance with Paragraph (d) of Rule .0535 of this Section.

(b) Application format guidelines. All applications and plans required by Rules .0531 through .0547 of this Section shall be prepared in accordance with the following guidelines:

(1) The initial application shall:

(A) contain a cover sheet stating the project title and location, the applicant's name and address, and the engineer's name, address, signature, date of signature and seal; and

(B) contain a statement defining the purpose of the submittal signed and dated by the applicant.

(2) The text of the application shall:

(A) be submitted in a three ring binder;

(B) contain a table of contents or index outlining the body of the application and the appendices;

(C) be paginated consecutively; and

(D) identify revised text by noting the date of revision on the page.

(3) Drawings. The engineering drawings for all landfill facilities shall be submitted using the following format.

(A) The sheet size with title blocks shall be at least 22 inches by 34 inches.

(B) The cover sheet shall include the project title, applicant's name, sheet index, legend of symbols, and the engineer's name, address, signature, date of signature, and seal.

(C) Where the requirements do not explicitly specify a minimum scale, maps and drawings shall be prepared at a scale that adequately illustrates the subject requirement(s).

(4) Number of copies. An applicant shall submit a minimum of three copies of each original application document and any revisions to the Division. The Division shall request additional copies as necessary. The Division shall require submittal of relevant documents in electronic format.

(c) Permitting and Public Information Procedures.

(1) Purpose and Applicability.

(A) Purpose. During the permitting process the Division shall provide for public review of and input to permit documents containing the applicable design and operating conditions. The Division shall provide for consideration of comments received and notification to the public of the permit design.

(B) Applicability. Applications for a Permit to Construct for a new facility, for a substantial amendment to the permit for an existing facility, or for a modification to the permit involving corrective remedy selection required by Paragraphs (d) through (h) of Rule .0545 of this Section shall be subject to the requirements of Subparagraphs (c)(2) through (c)(9) of this Rule. Applications submitted in accordance with Subparagraphs (a)(2) and (a)(4) of this Rule are not subject to the requirements of this Paragraph.

(2) Draft Permits.

(A) Once an application is complete, the Division shall decide whether the permit should be issued or denied.

(B) If the Division decides to deny the permit, the Division shall send a notice to deny to the applicant. Reasons for permit denial shall be in accordance with Rule .0203(e) of this Subchapter.

(C) If the Division decides the permit should be issued, the Division shall prepare a draft permit.

(D) A draft permit shall contain (either expressly or by reference) all applicable terms and conditions for the permit.

(E) All draft permits shall be subject to the procedures of Subparagraphs (3) through (9) of this Paragraph, unless otherwise specified in those Subparagraphs.

(3) Fact Sheet.

(A) The Division shall prepare a fact sheet for every draft permit.

(B) The fact sheet shall include a brief description of the type of facility or activity which is the subject of the draft permit. It shall also include a description of the area to be served and of the volume and characteristics of the waste stream, and a projection of the useful life of the landfill. The fact sheet shall contain a brief summary of the basis for the draft permit conditions, including references to applicable statutory or regulatory provisions and appropriate supporting references to

the permit application. The fact sheet shall describe the procedures for reaching a decision on the draft permit. It shall include the beginning and ending dates of the comment period under Subparagraph (4) of this Paragraph, the address where comments will be received, the procedures for requesting a public hearing and any other procedures by which the public may participate in the decision. The fact sheet shall contain the name and telephone number of a person to contact for additional information.

(C) The Division shall send this fact sheet to the applicant and make it available to the public for review or copying at the central office of the Division of Waste Management – Solid Waste Section. The Division shall post the fact sheet on the Division web site.

(4) Public Notice of Permit Actions and Public Hearings.

(A) The Division shall give public notice of each of the following: a draft permit has been prepared; a public hearing has been scheduled under Subparagraph (6) of this Paragraph; or a notice of intent to deny a permit has been prepared under Part (2)(B) of this Paragraph.

(B) No public notice is required when a request for a permit modification is denied.

(C) The Division shall give written notice of denial to the applicant.

(D) Public notices may describe more than one permit or permit action.

(E) Public notice of the preparation of a draft permit or a notice of intent to deny a permit shall allow at least 45 days for public comment.

(F) The Division shall give public notice of a public hearing at least 15 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 notices may be combined.

(G) Public notice of activities described in Part (A) of this Subparagraph shall be given by publication on the Division website, by publication in a daily or weekly local newspaper of general circulation, and by any other method deemed necessary or appropriate by the Division to give actual notice of the activities to persons potentially affected.

(H) General Public Notices. All public notices issued under this Part shall at minimum contain the following: (1) name, address and phone number of the office processing the permit action for which notice is being given; (2) name and address of the owner and operator applying for the

permit; (3) a brief description of the business conducted at the facility or activity described in the permit application including the size and location of the facility and type of waste accepted; (4) a brief description of the comment procedures required by Subparagraphs (5) and (6) of this Paragraph, including a statement of procedures to request a public hearing, unless a hearing has already been scheduled, and other procedures by which the public may participate in the permit decision; (5) name, address, and telephone number of a Division staff from whom interested persons may obtain further information; (6) a description of the time frame and procedure for making an approval or disapproval decision of the application; and (7) any additional information considered necessary or proper as required by the Division.

(I) Public Notices for Public Hearing. In addition to the general public notice described in Part (4)(A) of this Paragraph, the public notice of a public hearing shall contain the date, time, and place of the public hearing; a brief description of the nature and purpose of the public hearing, including the applicable rules and procedures; and a concise statement of the issues raised by the persons requesting the hearing.

(5) Public Comments and Requests for Public Hearings. During the public comment period any interested person may submit written comments on the draft permit and may request a public hearing if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Division shall consider all comments in making a final permit decision. The Division shall respond to all comments as provided in Subparagraph (9) of this Paragraph.

(6) Public Hearings.

(A) The Division ~~shall~~ may hold a public hearing on a draft permit(s) when a hearing is requested. The Division may also hold a public hearing at its discretion whenever such a hearing might clarify one or more issues involved in the permit decision. Public hearings held pursuant to this Rule shall be at a location convenient to the nearest population center to the subject facility. Public notice of the hearing shall be given as specified in Subparagraph (4) of this Paragraph.

(B) Any person may submit oral or written statements and data concerning the draft permit. The public comment period under Subparagraph (4) of this Paragraph is extended to the close of any public hearing conducted under this Subparagraph. The hearing officer may also extend the public comment period by so stating at the hearing, when information is presented at the hearing which indicates the importance of extending the period to receive additional comments, to allow potential commentors to gather more information, to allow time for submission of written versions of oral comments made at the hearing, or to allow time for rebuttals of comments made during the hearing.

(C) The Division shall make available to the public a recording or written transcript of the hearing for review or copying at the central office of the Division of Waste Management - Solid Waste Section.

(7) Reopening of the Public Comment Period.

(A) If any data, information, or arguments submitted during the public comment period appear to raise substantial new questions concerning a permit action, the Division may prepare a new draft permit, appropriately modified, under



- Subparagraph (2) of this Paragraph; prepare a fact sheet or revised fact sheet under Subparagraph (3) of this Paragraph and reopen the comment period under Subparagraph (4) of this Paragraph; or reopen or extend the comment period under Subparagraph (4) of this Paragraph to give interested persons an opportunity to comment on the information or arguments submitted.
- (B) Comments filed during the reopened comment period shall be limited to the substantial new questions that caused its reopening. The public notice under Subparagraph (4) of this Paragraph shall define the scope of the reopening.
- (C) Public notice of any of the actions of this Subparagraph shall be issued in accordance with Subparagraph (4) of this Paragraph.
- (8) Permit Decision.
- (A) After the close of the public comment period under Subparagraph (4) of this Paragraph on a draft permit or a notice of intent to deny a permit, the Division shall issue a permit decision. The Division shall notify the applicant and each person who has submitted a written request for notice of the permit decision. For the purposes of this Subparagraph, a permit decision means a decision to issue, deny or modify a permit.
- (B) A permit decision shall become effective upon the date of the service of notice of the decision unless a later date is specified in the decision.
- (9) Response to Comments.
- (A) At the time that a permit decision is issued under Subparagraph (8) of this Paragraph, the Division shall issue a written response to comments. This response shall specify which provisions, if any, of the draft permit have been changed in the permit decision, and the reasons for the change. The response shall also briefly describe and respond to all significant comments on the draft permit raised during the public comment period, or during any public hearing.
- (B) The Division shall make the response to comments available to the public for review or copying at the central office of the Division of Waste Management – Solid Waste Section.
- (d) Permit approval or denial. The Division shall review all permit applications in accordance with Rule .0203 of Section .0200 - PERMITS FOR SOLID WASTE MANAGEMENT FACILITIES.

*History Note: Authority G.S. 130A-294;*

*Eff. January 1, 2007.*

### **15A NCAC 13B .0536 SITE STUDY FOR C&DLF FACILITIES**

(a) Purpose. As required under Rule .0535 of this Section, the owner or operator must prepare a site study which meets the requirements of this Rule. The Division shall review the site study for a proposed new facility prior to consideration of an application for a permit to construct.

Following review of the site study, the Division shall notify the applicant that either:

(1) the site is deemed suitable and the applicant is authorized to prepare an application for a permit to construct in accordance with Rule .0535 of this Section; or

(2) the site is deemed unsuitable for establishing a C&DLF unit(s) and shall specify the reasons that would prevent the C&DLF unit(s) from being operated in accordance with G.S. 130A Article 9, or this Subchapter, and any applicable federal laws and regulations.

(b) Scope. The site is the land which is proposed for the landfill facility. The site study presents a characterization of the land, incorporating various investigations and requirements pertinent to suitability of a C&DLF facility. The scope of the site study includes criteria associated with the public health and welfare, and the environment. The economic feasibility of a proposed site is not within the scope of this study. The information in the site study must accurately represent site characteristics and must be prepared by qualified environmental professionals as set forth in Subparagraph (a)(3) of Rule .0202 of this Subchapter. New C&DLF unit(s) and lateral expansions must comply with the siting criteria set forth in Paragraph (c) of this Rule, Subparagraphs (4) through (10). In order to demonstrate compliance with specific criteria for each of the respective location restrictions, documentation or approval by agencies other than the Division of Waste Management, Solid Waste Section may be required. The scope of demonstrations including design and construction performance must be addressed in the site study.

(c) The site study prepared for a C&DLF facility must include the information required by this Paragraph.

(1) Characterization study. The site characterization study area includes the landfill facility and a 2000-foot perimeter measured from the proposed boundary of the landfill facility. The study must include an aerial photograph taken within one year of the original submittal date, a report, and a local map. The map and photograph must be at a scale of at least one inch equals 400 feet. The study must identify the following:

(A) the entire property proposed for the disposal site and any on-site easements;

(B) existing land use and zoning;

(C) the location of residential structures and schools;

(D) the location of commercial and industrial buildings, and other potential sources of contamination;

(E) the location of potable wells and public water supplies;

(F) historic sites;

(G) state nature and historic preserves;

(H) the existing topography and features of the disposal site including: general surface water drainage patterns and watersheds, 100-year floodplains, perennial and intermittent streams, rivers, and lakes; and

(I) the classification of the surface water drainage from landfill site in accordance with 15A NCAC 02B .0300.

(2) Proposed Facility Plan. A conceptual plan for the development of the facility including drawings and a report must be prepared which includes the drawings and

reports described in Subparagraphs (d)(1), (e)(1), (e)(2), and (e)(3) of Rule .0537 of this Section.

(3) Site Hydrogeologic Report. The study must be prepared in accordance with the requirements set forth in Paragraph (a) of Rule .0538 of this Section.

(4) Floodplain Location Restrictions;

(A) C&DLF units or constructed embankments used to construct a C&DLF unit must not be located in a 100-year floodplain unless a variance for the facility has been issued in accordance with G.S. 143-215.54A.

(B) C&DLF units must not be located in floodplains unless the owners or operators demonstrate that the unit will not restrict the flow of the flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health and the environment.

(5) Wetlands Location Restriction. New C&DLF units and lateral expansions must not be located in wetlands, unless the owner or operator can make the following demonstrations to the Division:

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

(B) The construction and operation of the C&DLF unit(s) will not cause or contribute to violations of any applicable State water quality standards and will not violate any applicable toxic effluent standard or prohibition under Section 307 of the Clean Water Act.

(C) The construction and operation of the C&DLF unit(s) will not jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Federal Endangered Species Act of 1973. The construction and operation of the C&DLF unit(s) will not violate any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary.

(D) The construction and operation of the C&DLF unit(s) will not cause or contribute to significant degradation of wetlands.

(E) The owner or operator must demonstrate the integrity of the C&DLF unit(s) and its ability to protect ecological resources by addressing the following factors:

(1) erosion, stability, and migration potential of native wetland soils, muds and deposits used to support the C&DLF unit; (2) erosion, stability, and migration potential of dredged and fill materials used to support the C&DLF unit; the volume and chemical nature of the waste managed in the C&DLF unit; (3) impacts on fish, wildlife, and other aquatic resources and their habitat from release of the solid waste; (4) the potential effects of catastrophic release of waste to the wetland and the resulting impacts on the environment; and (5) any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected to the extent required under Section 404 of the Clean Water Act or applicable State wetlands laws.

(F) The owner or operator must demonstrate that steps have been taken to attempt to achieve no net loss of wetlands (as defined by acreage and function) by first avoiding impacts to wetlands to the maximum extent practicable as required by Part (c)(5)(A) – (D) 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 wetlands or creation of man-made wetlands).

(G) The owner or operator must also demonstrate that sufficient information is available to make a reasonable determination with respect to each of the demonstrations required by this Rule.

(H) For purposes of this Rule, wetlands means those areas that are defined in 40 CFR 232.2(r).

(6) Unstable Area Location Restrictions. Owners and operators of new C&DLF unit(s) and lateral expansions proposed for location in an unstable area must demonstrate that engineering measures have been incorporated in the C&DLF unit's design to ensure that the integrity of any structural components of the C&DLF unit will not be disrupted. The owner and operator must consider the following factors, at a minimum, when determining whether an area is unstable:

(A) On-site or local soil conditions that may result in significant differential settling;

(B) On-site or local geologic or geomorphologic features; and

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

(7) Cultural Resources Location Restrictions. A new C&DLF unit or lateral expansion must not damage or destroy a property of archaeological or historical significance which has been listed or determined eligible for a listing in the National Register of Historic Places. To aid in making a determination as to whether the property is of archeological or historical significance, the State's Historic Preservation Office in the Department of Cultural Resources may request the owner and operator to perform a site-specific survey which must be included in the Site Study.

(8) State Nature and Historic Preserve Location Restrictions. A new C&DLF unit or lateral expansion must not have an adverse impact, considering the purposes for designation of the Preserve lands and the location, access, size and operation of the landfill, on any lands included in the State Nature and Historic Preserve.

(9) Water Supply Watersheds Location Restrictions;

(A) A new C&DLF unit or lateral expansion must not be located in the critical area of a water supply watershed, or in the watershed for a stream segment classified as WS-I, or in watersheds of other water bodies which indicate that no new landfills are allowed in accordance with the rules codified at 15A NCAC 02B Section .0200 entitled "Classifications and Water Quality Standards Applicable To Surface Waters Of North Carolina."

(B) Any new C&DLF unit or lateral expansion, which proposes to discharge leachate to surface waters and must obtain a National Pollution Discharge Elimination System (NPDES) Permit from the Division of Environmental Management pursuant to Section 402 of the United States Clean Water Act, must not be located within watersheds classified as WS-II or WS-III, or in watersheds of other water bodies which indicate that no new discharging landfills are allowed, in accordance with the rules codified at 15A NCAC 02B Section .0200.

(10) Endangered and Threatened Species Location Restrictions. A new C&DLF unit or lateral expansion must not jeopardize the continued existence of endangered or

threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Federal Endangered Species Act of 1973.

(11) Local government approvals for C&DLFs.

(A) If the permit applicant is a unit of local government in which jurisdiction the proposed C&DLF site is located, the approval of the governing board shall be required. Approval may be in the form of either a resolution or a vote on a motion. A copy of the resolution or the minutes of the meeting where the vote was taken must be submitted to the Division as part of the site study.

(B) A permit applicant other than the unit of local government with jurisdiction over the proposed landfill site must obtain a franchise in accordance with G.S. 130A-294(b1)(3) from each unit of local government in whose jurisdiction the site is located. A copy of the franchise must be submitted to the Division as part of the site study.

(C) Prior to issuance of approval or a franchise, the jurisdictional local government(s) where the landfill is to be located shall hold at least one public meeting to inform the community of the proposed waste management activities as described in the proposed facility plan prepared in accordance with Subparagraph (2) of this Paragraph. The local government where the landfill is to be located shall provide a public notice of the meeting at least 30 days prior to the meeting. For purposes of this Part, public notice must include a legal advertisement placed in a newspaper or newspapers serving the county and provision of a news release to at least one newspaper serving the county. Public notice must include time, place, and purpose of the meetings required by this Part. The application for a franchise or other documentation as required by the appropriate local government(s), must be placed at a location that is accessible by the public. This location must be noted in the public notice. The permit applicant must notify the property owners of all property that shares a common border with the proposed facility by means of a U.S. Postal Service registered letter, return receipt requested. The notice must give the date, time and place of the public meeting, and must describe the facility plan for the landfill, including the areal location and final elevation of all waste disposal units, the type and amount of waste to be disposed at the landfill, any other waste management activities to be conducted at the facility, and the proposed location of the entrance to the facility. Mailings must be postmarked a minimum of 30 days prior to the public meeting which is being noticed. The applicant must provide documentation of the content and mailing of the notices in the site study.

(D) Public notice of the meeting must be documented in the site study. A tape recording or a written transcript of the meeting, all written material submitted representing community concerns, and all other relevant written material distributed or used at the meeting must be submitted as part of the site study.

(E) A letter from the unit of local government(s) having zoning jurisdiction over the site which states that the proposal meets all the requirements of the local zoning ordinance, or that the site is not zoned, must be submitted to the Division as part of the site study.

~~(d) Site suitability applications for a new C&DLF facility or unit submitted in accordance with Rule .0504(1) of this Section must be submitted to the Division prior to December 31, 2006.~~

*History Note: Authority G.S. 130A-294;  
Eff. January 1, 2007.*

## **15A NCAC 13B .0538 GEOLOGIC AND HYDROGEOLOGIC INVESTIGATIONS FOR C&DLF FACILITIES**

(a) Site Hydrogeologic Report. A permit applicant must conduct a hydrogeologic investigation and prepare a report. An investigation is required to assess the geologic and hydrogeologic characteristics of the proposed site to determine the suitability of the site for solid waste management activities, which areas of the site are most suitable for C&DLF units, and the general ground-water flow paths and rates for the uppermost aquifer. The report must provide an understanding of the relationship of the site ground-water flow regime to local and regional hydrogeologic features with special emphasis on the relationship of C&DLF units to ground-water receptors (especially drinking water wells) and to ground-water discharge features. Additionally, the scope of the investigation must include the general geologic information necessary to address compliance with the pertinent location restrictions described in Rule .0536 of this Section. The Site Hydrogeologic Report must provide, at a minimum, the following information:

- (1) A report on local and regional geology and hydrogeology based on research of available literature for the area. This information is to be used in planning the field investigation. For sites located in piedmont or mountain regions, this report must include an evaluation of structurally controlled features identified on a topographic map of the area.
- (2) A report on field observations of the site that includes information on the following:
  - (A) topographic setting, springs, streams, drainage features, existing or abandoned wells, rock outcrops, (including trends in strike and dip), and other features that may affect site suitability or the ability to effectively monitor the site; and
  - (B) ground-water discharge features. For a proposed site where the owner or operator does not control the property from any landfill unit boundary to the controlling, downgradient, ground-water discharge feature(s), additional borings, geophysics or other hydrogeological investigations may be required to characterize the nature and extent of groundwater flow; and
  - (C) the hydrogeological properties of the bedrock, if the uppermost ground-water flow is predominantly in the bedrock. Bedrock for the purpose of this rule is defined as material below auger refusal.
- (3) Borings for which the numbers, locations, and depths are sufficient to provide an adequate understanding of the subsurface conditions and ground-water flow regime of the uppermost aquifer at the site. The number and depths of borings required will depend on the hydrogeologic characteristics of the site. At a minimum, there must be an average of one boring for each 10 acres of the proposed landfill facility unless otherwise authorized by the Division. All borings intersecting the water table must be converted to piezometers or monitoring wells in accordance with 15A NCAC 02C .0108.
- (4) A testing program for the borings which describes the frequency, distribution, and type of samples taken and the methods of analysis (ASTM Standards or test methods approved by the Division) used to obtain, at a minimum, the following information:
  - (A) standard penetration - resistance (ASTM D 1586);
  - (B) particle size analysis (ASTM D 422);
  - (C) soil classification: Unified Soil Classification System (USCS) (ASTM D 2487);

- (D) formation descriptions; and
  - (E) saturated hydraulic conductivity, porosity, effective porosity, and dispersive characteristics for each lithologic unit of the uppermost aquifer including the vadose zone.
- (5) In addition to borings, other techniques may be used to investigate the subsurface conditions at the site, including but not limited to: geophysical well logs, surface geophysical surveys, and tracer studies.
- (6) Stratigraphic cross-sections identifying hydrogeologic and lithologic units, and stabilized water table elevations.
- (7) Water table information, including:
- (A) tabulations of water table elevations measured at the time of boring, 24 hours, and stabilized readings for all borings (measured within a period of time short enough to avoid temporal variations in ground-water flow which could preclude accurate determination of ground-water flow direction and rate);
  - (B) tabulations of stabilized water table elevations over time in order to develop an understanding of seasonal fluctuations in the water table;
  - (C) an estimation of the long-term seasonal high water table based on stabilized water table readings, hydrographs of wells in the area, precipitation and other meteorological data, and streamflow measurements from the site frequent enough to demonstrate infiltration and runoff characteristics, and any other information available; and
  - (D) a discussion of any natural or man-made activities that have the potential for causing water table fluctuations, including but not limited to, tidal variations, river stage changes, flood pool changes of reservoirs, high volume production wells, and injection wells.
- (8) The horizontal and vertical dimensions of ground-water flow including flow directions, rates, and gradients.
- (9) Ground-water contour map(s) to show the occurrence and direction of ground-water flow in the uppermost aquifer and any other aquifers identified in the hydrogeologic investigation. The ground-water contours must be superimposed on a topographic map. The location of all borings and rock cores and the water table elevations or potentiometric data at each location used to generate the ground-water contours must be shown on the ground-water contour map(s).
- (10) A topographic map of the site locating soil borings with accurate horizontal and vertical control, which are tied to a permanent onsite benchmark.
- (11) Information for wells and water intakes within the site characterization study area, in accordance with Rule .0536(c) of this Section including:
- (A) boring logs, construction records, field logs and notes, for all onsite borings, piezometers and wells;
  - (B) construction records, number and location served by wells, and production rates, for public water wells; and
  - (C) available information for all surface water intakes, including use and production rate.
- (12) Identification of other geologic and hydrologic considerations including but not limited to: slopes, streams, springs, gullies, trenches, solution features, karst terranes,



sinkholes, dikes, sills, faults, mines, ground-water discharge features, and ground-water recharge/discharge areas.

(13) A report summarizing the geological and hydrogeological evaluation of the site that includes the following:

- (A) a description of the relationship between the uppermost aquifer of the site to local and regional geologic and hydrogeologic features,
- (B) a discussion of the ground-water flow regime of the site focusing on the relationship of C&DLF unit(s) to ground-water receptors and to ground-water discharge features,
- (C) a discussion of the overall suitability of the proposed site for solid waste management activities and which areas of the site are most suitable for C&DLF units, and
- (D) a discussion of the ground-water flow regime of the uppermost aquifer at the site and the ability to effectively monitor the C&DLF units in order to ensure early detection of any release of constituents to the uppermost aquifer.

(b) Design Hydrogeologic Report

(1) A geological and hydrogeological report must be submitted in the application for the Permit to Construct. This report must contain the information required by Subparagraph (2) of this Paragraph. The number and depths of borings required must be based on the geologic and hydrogeologic characteristics of the landfill facility. ~~At a minimum, there must be an average of one boring for each acre of the investigative area.~~ The area of investigation must, at a minimum, be the area within the unit footprint and unit compliance boundary, unless otherwise authorized by the Division. The scope and purpose of the investigation is as follows:

- (A) The investigation must provide adequate information to demonstrate compliance with the vertical separation and foundation standards set forth in Items (2) and (5) of Rule .0540 of this Section.
- (B) The report must include an investigation of the hydrogeologic characteristics of the uppermost aquifer for the proposed phase of C&DLF development and any leachate management unit(s). The purpose of this investigation is to provide more detailed and localized data on the hydrogeologic regime for this area in order to design an effective water quality monitoring system.

(2) The Design Hydrogeologic Report must provide, at a minimum, the following information:

- (A) the information required in Subparagraphs (a)(4) through (a)(12) of this Rule;
- (B) the technical information necessary to determine the design of the monitoring system as required by Paragraph (b) of Rule .0544 of this Section;
- (C) the technical information necessary to determine the relevant point of compliance as required by Part (b)(1)(B) of Rule .0544 of this Section;
- (D) rock cores (for sites located in the piedmont or mountain regions) for which the numbers, locations, and depths are adequate to provide an understanding of the fractured bedrock conditions and ground-water flow characteristics of at least the upper 10 feet of the bedrock. Testing for the corings must provide, at a minimum, rock types, recovery values, rock quality designation (RQD) values, saturated hydraulic conductivity and secondary porosity values, and rock descriptions, including fracturing and jointing patterns, etc.;

- (E) a ground-water contour map based on the estimated long-term seasonal high water table that is superimposed on a topographic map and includes the location of all borings and rock cores and the water table elevations or potentiometric data at each location used to generate the ground-water contours;
- (F) a bedrock contour map (for sites located in piedmont or mountain regions) illustrating the contours of the upper surface of the bedrock that is superimposed on a topographic map and includes the location of all borings and rock cores and the top of rock elevations used to generate the upper surface of bedrock contours;
- (G) a three dimensional ground-water flow net or several hydrogeologic cross-sections that characterize the vertical ground-water flow regime for this area;
- (H) a report on the ground-water flow regime for the area including ground-water flow paths for both horizontal and vertical components of ground-water flow, horizontal and vertical gradients, flow rates, ground-water recharge areas and discharge areas;
- (I) a report on the soils in the four feet immediately underlying the waste with relationship to properties of the soil. Soil testing cited in Subparagraph (a)(4) of this Rule must be used as a basis for this discussion; and
- (J) a certification by a Licensed Geologist that all borings which intersect the water table at the site have been constructed and maintained as permanent monitoring wells in accordance with 15A NCAC 02C .0108, or that the borings will be properly abandoned in accordance with the procedures for permanent abandonment of wells as delineated in 15A NCAC 02C .0113. All piezometers within the footprint area must be overdrilled to the full depth of the boring, prior to cement or bentonite grout placement, and the level of the grout within the boring must not exceed in height the elevation of the proposed basegrade.

*History Note: Authority G.S. 130A-294;  
Eff. January 1, 2007.*

### 15A NCAC 13B .0539 ENGINEERING PLAN FOR C&DLF FACILITIES

(a) Purpose. The engineering plan must incorporate the detailed plans and specifications relative to the design and performance of the C&DLF's containment and environmental control systems. This plan must set forth the design parameters and construction requirements for the components of the C&DLF's systems and must establish the responsibilities of the design engineer. The engineered components must be described in Rule .0540 of this Section. As required under Rule .0535 of this Section, the owner or operator must submit an engineering plan, which meets the requirements of this Rule.

(b) Responsibilities of the design engineer. The engineering plan must be prepared by a Professional Engineer licensed to practice engineering in accordance with G.S. 89C and must meet the requirements of this Rule. The design engineer must incorporate a statement certifying this fact and bearing his or her seal of registration.

(c) Scope. An engineering plan must be prepared for a phase of development not to exceed approximately five years of operating capacity consistent with the development phases and design criteria defined in the facility plan. The engineering plan shall contain a report and a set of drawings which consistently represent the engineering design.

(d) An engineering report must contain:

(1) A summary of the facility design that includes:

- (A) a discussion of the analytical methods used to evaluate the design,
- (B) definition of the critical conditions evaluated and assumptions made,
- (C) a list of technical references used in the evaluation, and
- (D) completion of any applicable location restriction demonstrations in accordance with Rule .0536 of this Section.

(2) A description of the materials and construction practices that conforms to the requirements set forth in Rule .0540 of this Section.

(3) A copy of the Design Hydrogeologic Report prepared in accordance with Paragraph (b) of Rule .0538 of this Section.

(e) Engineering drawings must illustrate:

(1) existing conditions: site topography, features, existing disposal areas, roads, and buildings;

(2) grading plans: proposed limits of excavation, subgrade elevations, intermediate grading for partial construction;

(3) stormwater segregation system, if required: location and detail of features;

(4) cap system: base and top elevations, landfill gas devices, infiltration barrier, surface water removal, protective and vegetative cover, and details;

(5) temporary and permanent sedimentation and erosion control plans;

(6) vertical separation requirement estimates including:

(A) Cross-sections, showing borings, which indicate existing ground surface elevations, base grades, seasonal high ground-water level, estimated long-term seasonal high ground-water level in accordance with Part (b)(2)(E) of Rule .0538 of this Section, and bedrock level in accordance with Part (b)(2)(F) of Rule .0538 of this Section; and

(B) A map showing the existing ground surface elevation and base grades. The map must include labeled boring locations which indicate seasonal high ground-water level, estimated long term high ground-water level in accordance with Part

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(b)(2)(E) of Rule .0538 of this Section, and bedrock level in accordance with Part (b)(2)(F) of Rule .0538 of this Section.

(f) The engineering plan must also describe and illustrate additional engineering features and details including, if proposed by the applicant, the cap system, leachate collection system and base liner system. Cap systems, leachate collection systems and base liner systems must be designed in accordance with NC Solid Waste Management Rules 15A NCAC 13B .1620 and .1621.

*History Note: Authority G.S. 130A-294;  
Eff. January 1, 2007.*

**15A NCAC 13B .0542 OPERATION PLAN AND REQUIREMENTS FOR C&DLF FACILITIES**

(a) The owner or operator of a C&DLF unit must maintain and operate the facility in accordance with the operation plan prepared in accordance with this Rule. The operation plan must be submitted in accordance with Rule .0535 of this Section. Each phase of operation must be defined by an area which contains approximately five years of disposal capacity.

(b) Operation Plan. The owner or operator of a C&DLF unit must prepare an operation plan for each phase of landfill development. The plan must include drawings and a report defining the information as identified in this Rule.

(1) Operation drawings. Drawings must be prepared for each phase of landfill development. The drawings must be consistent with the engineering plan and prepared in a format which is useable for the landfill operator. The operation drawings must illustrate the following:

- (A) existing conditions including the known limits of existing disposal areas;
- (B) progression of operation including initial waste placement, daily operations, yearly contour transitions, and final contours;
- (C) stormwater controls for active and inactive subcells, if required;
- (D) special waste handling areas, such as asbestos disposal area, within the C&DLF unit;
- (E) buffer zones, noting restricted use;
- (F) stockpile and borrow operations; and
- (G) other solid waste activities, such as tire disposal or storage, yard waste storage, white goods storage, recycling pads, etc.

(2) Operation Plan Description. The owner and operator of any C&DLF unit must maintain and operate the unit in accordance with the operation plan as described in Paragraphs (c) through (l) of this Rule.

(c) Waste Acceptance and Disposal Requirements.

(1) A C&DLF must accept only those solid wastes it is permitted to receive. The landfill owner or operator must notify the Division within 24 hours of attempted disposal of any waste the C&DLF is not permitted to receive, including waste from outside the area the landfill is permitted to serve.

(2) Asbestos waste must be managed in accordance with 40 CFR 61, which is hereby incorporated by reference including any subsequent amendments and additions. Copies of 40 CFR 61 are available for inspection at the Department of Environment and Natural Resources, Division of Waste Management. The regulated asbestos waste must be covered immediately with soil in a manner that will not cause airborne conditions and must be disposed of separate and apart from other solid wastes, as shown on Operation drawings:

- (A) in a defined isolated area within the footprint of the landfill, or
- (B) in an area not contiguous with other disposal areas. Separate areas must be designated so that asbestos is not exposed by future land-disturbing activities.

(d) Wastewater treatment sludge must not be accepted for disposal. Wastewater treatment sludge may be accepted, with the approval of the Division, for utilization as a soil conditioner and incorporated into or applied onto the vegetative growth layer. The wastewater treatment sludge must neither be applied at greater than agronomic rates nor to a depth greater than six inches.

(e) Waste Exclusions. The following wastes must not be disposed of in a C&DLF unit:

- (1) Containers such as tubes, drums, barrels, tanks, cans, and bottles unless they are empty and perforated to ensure that no liquid, hazardous or municipal solid waste is contained therein,
- (2) Garbage as defined in G.S. 130A-290(a)(7),
- (3) Hazardous waste as defined in G.S. 130A-290(a)(8), to also include hazardous waste from conditionally exempt small quantity generators,
- (4) Industrial solid waste unless a demonstration has been made and approved by the Division that the landfill meets the requirements of Rule .0503(2)(d)(ii)(A),
- (5) Liquid wastes,
- (6) Medical waste as defined in G.S. 130A-290(a)(18),
- (7) Municipal solid waste as defined in G.S. 130A-290(a)(18a),
- (8) Polychlorinated biphenyls (PCB) wastes as defined in 40 CFR 761,
- (9) Radioactive waste as defined in G.S. 104E-5(14),
- (10) Septage as defined in G.S. 130A-290(a)(32),
- (11) Sludge as defined in G.S. 130A-290(a)(34),
- (12) Special wastes as defined in G.S. 130A-290(a)(40),
- (13) White goods as defined in G.S. 130A-290(a)(44), and
- (14) Yard trash as defined in G.S. 130A-290(a)(45),
- (15) The following wastes cannot be received if separate from C&DLF waste: lamps or bulbs including but not limited to halogen, incandescent, neon or fluorescent; lighting ballast or fixtures; thermostats and light switches; batteries including but not limited to those from exit and emergency lights and smoke detectors; lead pipes; lead roof flashing; transformers; capacitors; and copper chrome arsenate (CCA) and creosote treated woods.
- (16) Waste accepted for disposal in a C&DLF unit must be readily identifiable as C&D waste and must not have been shredded, pulverized, or processed to such an extent that the composition of the original waste cannot be readily ascertained except as specified in Subparagraph (17) of this Paragraph.
- (17) C&D waste that has been shredded, pulverized or otherwise processed may be accepted for disposal from a facility that has received a permit from an authorized regulatory authority which specifies such activities are inspected by the authority, and whose primary purpose is recycling and reuse of the C&D material. A waste screening plan and waste acceptance plan must be made available to the Division upon request.
- (18) The owner or operator of a C&DLF must not knowingly dispose any type or form of C&D waste that is generated within the boundaries of a unit of local government that by ordinance:

(A) Prohibits generators or collectors of C&D waste from disposing that type or form of C&D waste.

(B) Requires generators or collectors of C&D waste to recycle that type or form of C&D waste.

(f) Cover material requirements.

- (1) Except as provided in Subparagraph (3) of this Paragraph, the owners and operators of all C&DLF units must cover the solid waste with six inches of earthen material when the waste disposal area exceeds one-half acre and at least once weekly. Cover must be placed at more frequent intervals if necessary to control disease vectors, fires, odors, blowing litter, and scavenging. A notation of the date and time of the cover placement must be recorded in the operating record as specified in Paragraph (n) of this Rule.

(2) Except as provided in Subparagraph (3) of this Paragraph, areas which will not have additional wastes placed on them for three months or more, but where final termination of disposal operations has not occurred, must be covered and stabilized with vegetative ground cover or other stabilizing material.

(3) Alternative materials or an alternative thickness of cover may be approved by the Division if the owner or operator demonstrates that the alternative material or thickness controls disease vectors, fires, odors, blowing litter, and scavenging without presenting a threat to human health and the environment. A C&DLF owner or operator may apply for approval of an alternative cover material. If approval is given by the Division, approval would extend to all C&DLF ~~units at one specific facility~~.

(g) Spreading and Compacting requirements.

(1) C&DLF units must restrict solid waste into the smallest area feasible.

(2) Solid waste must be compacted as densely as practical into cells.

(3) Appropriate methods such as fencing and diking must be provided within the area to confine solid waste which is subject to be blown by the wind. At the conclusion of each operating day, all windblown material resulting from the operation must be collected and disposed of by the owner and operator.

(h) Disease vector control. Owners and operators of all C&DLF units must prevent or control on-site populations of disease vectors using techniques appropriate for the protection of human health and the environment. For purposes of this item, "disease vectors" means any rodents, flies, mosquitoes, or other animals or insects, capable of transmitting disease to humans.

(i) Air Criteria and Fire Control.

(1) Owners and operators of all C&DLF units must ensure that the units do not violate any applicable requirements developed under a State Implementation Plan (SIP) approved or promulgated by the U.S. EPA Administrator pursuant to Section 110 of the Clean Air Act, as amended.

(2) Open burning of solid waste, except for the approved burning of land clearing debris generated on-site or debris from emergency clean-up operations, is prohibited at all C&DLF facilities. Prior to any burning a request must be sent to the Division for review. The Division will determine the burning to be approved if it is one of the two types of burning as referenced in this Subparagraph. A notation of the date of approval and the name of the Division personnel who approved the burning must be included in the operating record.

(3) Equipment must be provided to control accidental fires and arrangements must be made with the local fire protection agency to immediately provide fire-fighting services when needed.

(4) Fires and explosions that occur at a C&DLF require verbal notice to the Division within 24 hours and written notification within 15 days. Written notification must include the suspected cause of fire or explosion, the response taken to manage the incident, and the action(s) to be taken to prevent the future occurrence of fire or explosion.

(j) Access and safety requirements.

(1) The C&DLF must be adequately secured by means of gates, chains, berms, fences and other security measures approved by the Division to prevent unauthorized entry.

(2) In accordance with G.S. 130A-309.25, an individual trained in landfill operations must be on duty at the site while the facility is open for public use and at all times during active waste management operations to ensure compliance with operational requirements.

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- (3) The access road to the site and access roads to monitoring locations must be of all-weather construction and maintained in good condition.
- (4) Dust control measures must be implemented.
- (5) Signs providing information on disposal procedures, the hours during which the site is open for public use, the permit number and other pertinent information specified in the permit conditions must be posted at the site entrance.
- (6) Signs must be posted which at a minimum list liquid, hazardous and municipal solid waste as being excluded from the C&DLF unit.
- (7) Traffic signs or markers must be provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient operating conditions.
- (8) The removal of solid waste from a C&DLF is prohibited unless the unit has included in its operational plan a recycling program which has been approved by the Division. The general public is prohibited from removal activities on the working face.

(k) Erosion and sedimentation control requirements.

- (1) Adequate sediment control measures consisting of vegetative cover, materials, structures or devices must be utilized to prevent sediment from leaving the C&DLF facility.
- (2) Adequate sediment control measures consisting of vegetative cover, materials, structures or devices must be utilized to prevent excessive on-site erosion of the C&DLF facility or unit.
- (3) Provisions for a vegetative ground cover sufficient to restrain erosion must be accomplished as directed by appropriate state or local agency upon completion of any phase of C&DLF development consistent with Rule .0543(c)(5) of this Section.

(l) Drainage control and water protection requirements.

- (1) Surface water must be diverted from the operational area.
- (2) Surface water must not be impounded over or in waste.
- (3) Solid waste must not be disposed of in water.
- (4) Leachate must be contained on-site or treated prior to discharge. An NPDES permit may be required prior to the discharge of leachate to surface waters.
- (5) C&DLF units must not:
  - (A) Cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act, including the National Pollutant Discharge Elimination System (NPDES) requirements, pursuant to Section 402.
  - (B) Cause the discharge of a nonpoint source of pollution to waters of the United States, including wetlands, that violates any requirement of an area-wide or State-wide water quality management plan that has been approved under Section 208 or 319 of the Clean Water Act, as amended.

(m) Survey for Compliance. Within 60 days of the permittee's receipt of the Division's written request, the permittee must cause to be conducted a survey of active or closed portions of unit or units at the facility in order to determine whether operations are being conducted in accordance with the approved design and operational plans. The permittee must report the results of such survey, including a map produced by the survey, to the Division within 90 days of receipt of the Division's request.



- (1) A survey shall be required by the Division:
    - (A) If there is reason to believe that operations are being conducted in a manner that deviates from the plan listed in the effective permit, or
    - (B) As a verification that operations are being conducted in accordance with the plan listed in the effective permit.
  - (2) Any survey performed pursuant to this Paragraph must be performed by a registered land surveyor duly authorized under North Carolina law to conduct such activities.
- (n) Operating Record and Recordkeeping requirements.
- (1) The owner and operator of a C&DLF unit must record and retain at the facility, or in an alternative location near the facility, the following information:
    - (A) records of random waste inspections, monitoring results, certifications of training, and training procedures required by Rule .0544 of this Section;
    - (B) amounts by weight of solid waste received at the facility to include, consistent with G.S. 130A-309.09D, county of generation;
    - (C) any demonstration, certification, finding, monitoring, testing, or analytical data required by Rules .0544 through .0545 of this Section;
    - (D) any closure or post-closure monitoring, testing, or analytical data as required by Rule .0543 of this Section;
    - (E) any cost estimates and financial assurance documentation required by Rule .0546 of this Section;
    - (F) notation of date and time of placement of cover material; and
    - (G) all audit records, compliance records and inspection reports.
  - (2) All information contained in the operating record must be furnished to the Division according to the permit or upon request, or be made available for inspection by the Division.
  - (3) The operating record must also include:
    - (A) A copy of the approved operation plan required by this Rule and the engineering plan required by Rule .0539 of this Section;
    - (B) A copy of the current Permit to Construct and Permit to Operate; and
    - (C) The Monitoring Plan, in accordance with Rule .0544 of this Section, included as appendices to the Operation Plan.

*History Note: Authority G.S. 130A-294;  
Eff. January 1, 2007.*

## SECTION .0700 - ADMINISTRATIVE PENALTY PROCEDURES

Rules .0701 - .0707 of Title 15A Subchapter 13B of the North Carolina Administrative Code (T15A.13B .0701 - .0707); have been transferred and recodified from Rules .0701 - .0707 of Title 10 Subchapter 10G of the North Carolina Administrative Code (T10.10G .0701 - .0707), effective April 4, 1990.

### 15A NCAC 13B .0701 ADMINISTRATIVE PENALTIES

The following rules shall govern the assessment, remission, mitigation and appeal of administrative penalties and Notice of Violations imposed by the Division under the Solid Waste Management Act, Article 9 of Chapter 130A of the North Carolina General Statutes.

*History Note: Authority G.S. 130A-22(f);*

*Eff. April 1, 1982;*

*Amended Eff. September 1, 1990; October 1, 1984.*

*The regulated community requests DEQ to adopt a tiered approach to resolving non-compliance issues as a result of a solid waste facility inspection. This approach would include the following 'Instruments' to address non-compliance:*

*Tier 1 - Deficiency Letter*

*Tier 2 – Warning Letter*

*Tier 3- Notice of Alleged Violation (NOV) issued*

*Informal fact finding meeting*

*Then, if warranted,*

*Tier 4 – Consent Order including penalty, if warranted, and a time schedule to correction non-compliance violation.*

*Please refer to the VA DEQ Solid Waste Compliance Inspection Program Manual at the following link for a complete description of this Program. In particular see Chapter 5 'Classifying and Resolving Non-Compliance', pages 21 – 34.*

<http://www.deq.virginia.gov/waste/guidance.html>

**Commented [A1]:** Regulated community requests a process that allows the appeal of NOV's. See recommendation below.

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### **15A NCAC 13B .1105 PERMIT REQUIRED**

- (a) No person, other than a person exempted by G.S. 130A-309.57(d), shall establish, operate or maintain, or allow to be established, operated or maintained upon his land, a scrap tire collection site or scrap tire disposal site unless a permit for the site has been obtained from the Division.
- (b) Application for permits required by this Rule shall be forwarded to the Solid Waste Section, Solid Waste Management Division, P.O. Box 27687, Raleigh, North Carolina 27611.
- (c) A permit is issued to the permit applicant for a particular site and is non-transferrable.
- (d) Scrap tire collection sites exempt from permitting under G.S. 130A-309.57(d) and Rule .1105 (i) of this Section are not subject to the storage requirements of Rule .1107 of this Section with the exception of Rule .1107(1) and (2)(c).
- (e) Trailers and roll-off containers used as scrap tire collection facilities are exempt from the requirements of Rule .1106 (c) of this Section with the exception of 3, 4, 8 and 10.
- (f) A permitted sanitary landfill, other than a demolition landfill, is deemed permitted as a scrap tire disposal site. Records shall be maintained in accordance with Rule .1108(c) of this Section.
- (g) A permitted sanitary landfill ~~operated by a unit of local government~~ is deemed permitted as a scrap tire collection site and may store up to 25,000 scrap tires for the purpose of comprising a marketable commodity.
- (h) Units of local government are not required to provide proof of financial responsibility.

*History Note: Authority G.S. 130A-309.57;  
Eff. October 1, 1990.*

*DEQ to review all rules that use term "Sanitary Landfill"*

#### **.1402 GENERAL PROVISIONS FOR SOLID WASTE COMPOST FACILITIES**

(a) Applicability. The provisions of this Rule apply to compost facilities that compost solid waste or co-compost solid waste with sludges that are not classified as a solid waste, functioning as a nutrient source. Facilities that co-compost with sewage sludge shall comply with all applicable federal regulations regarding sludge management at 40 CFR 501 and 503. 40 CFR 503, subpart B is hereby incorporated by reference, including subsequent amendments or additions. Copies of the Code of Federal Regulations may be obtained from the Solid Waste Section at 401 Oberlin Road, Suite 150, Raleigh, NC 27605 at no cost.

(b) The provisions of this Section do not apply to compost facilities that compost sludge with municipal solid waste functioning only as a bulking agent.

(c) Solid Waste Compost Facilities that have been permitted prior to the effective date of this Rule shall meet the requirements of this Section within one year of the effective date of this Rule, or, within two years if more than one hundred thousand dollars (\$100,000) of capital investment is necessary to comply with changes.

(d) Solid waste compost produced outside the State of North Carolina and imported into the state shall comply with the requirements specified in Rule .1407 of this Section.

(e) Compost that is disposed shall not count toward waste reduction goals.

(f) Solid waste compost facilities shall be classified based on the types and amounts of materials to be composted.

(1) Type 1 facilities may receive yard and garden waste, silvicultural waste, untreated and unpainted wood waste or any combination thereof.

(2) Type 2 facilities may receive pre-consumer meat-free food processing waste, vegetative agricultural waste, source separated paper or other source separated specialty wastes, which are low in pathogens and physical contaminants. Waste acceptable for a Type 1 facility may be composted at a Type 2 facility.

(3) Type 3 facilities may receive manures and other agricultural waste, meat, post consumer-source separated food wastes and other source separated specialty wastes or any combination thereof that are relatively low in physical contaminants, but may have high levels of pathogens. Waste acceptable for a Type 1 or 2 facility may be composted at a Type 3 facility.

(4) Type 4 facilities may receive mixed municipal solid waste, post collection separated or processed waste, industrial solid waste, non-solid waste sludges functioning as a nutrient source or other similar compostable organic wastes or any combination thereof. Waste acceptable for a Type 1, 2 or 3 facility may be composted at a Type 4 facility.

(5) The listed waste types in Subparagraph (f)(2) of this Rule shall be considered to be low in pathogens and physical contaminants if handled so as to prevent development of contaminants or exposure to physical contamination. The listed waste types in Subparagraph (f)(3) of this Rule are likely to have high pathogens and low physical contamination. In determining whether a specific waste stream is acceptable for composting in a Type 2 or Type 3 facility, the Division shall consider the method of handling the waste prior to delivery to the facility as well as the physical characteristics of the waste. Testing for pathogens and physical contaminants may be required where a determination cannot be made based upon prior knowledge of the waste. Test methods shall be in accord with Appendices A and B to meet requirements of Table 3.

(6) Small facilities are those that receive less than 1000 cubic yards of material for composting per quarter, and occupy less than two acres of land, except that a Small Type 1 facility shall process or store less than 6,000 cubic yards of material per quarter.

(7) Large facilities are those that receive 1000 cubic yards or more of material for composting per quarter or occupy two acres or more of land, except that a Large Type 1 facility shall process or store more than 6,000 cubic yards of material per quarter.

(g) A permit is not required for the following operations:

(1) Backyard composting.

(2) Farming operations and silvicultural operations where the compost is produced from materials grown on the owner's land and re-used on the owner's land or in his associated farming operations and not offered to the public.

(3) Small Type 1 Facilities meeting the following conditions:

(A) Notification of the Solid Waste Section prior to operation and on an annual basis as to:

(i) Facility location;

(ii) Name, address and phone number of owner and operator;

(iii) Type and amount of wastes received;

(iv) Composting process to be used; and

(v) Intended distribution of the finished product.

(B) Agreement to operate in accordance with operational requirements as set forth in Rule.1406 and the setbacks in Rule .1404(a)(1) - (10) of this Section.

(C) Facility operates in accordance with all other state or local laws, ordinances, rules, regulations or orders.

(D) Facility is not located over closed-out disposal site.

(E) Safety measures are taken to prevent fires and access to fire equipment or fire fighting services is provided.

(4) MSW and C&D LFs grinding green waste.

*History Note: Authority G.S. 130A-294; 130A-309.03; 130A-309.11; 130A-309.29; Eff. December 1, 1991; Amended Eff. May 1, 1996.*

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## **15A NCAC 13B .1502 RESOURCE RECOVERING EQUIPMENT**

Resource recovering equipment is equipment exclusively and integrally used in the actual process of recovering material or energy resources from solid waste including landfill gas recovery equipment. To qualify, the equipment need not be specially designed for the resource recovery process.

*History Note: Authority G.S. 130A-294(a)(3);  
Eff. June 2, 1976;  
Readopted Eff. December 5, 1977.*

## SECTION .1600 - REQUIREMENTS FOR MUNICIPAL SOLID WASTE LANDFILL FACILITIES (MSWLFs)

### 15A NCAC 13B .1601 PURPOSE, SCOPE, AND APPLICABILITY

(a) Purpose. The purpose of this Section is to regulate the siting, design, construction, operation, closure and post-closure of all municipal solid waste landfill facilities, MSWLFs.

(b) Scope. This Section describes the performance standards, application requirements, and permitting procedures for all municipal solid waste landfill facilities. The requirements of this Section are intended to:

- (1) Establish the State standards for MSWLFs to provide for effective disposal practices and protect the public health and environment.
- (2) Coordinate other State Rules applicable to landfills.
- (3) Facilitate the transition for existing landfill facilities which continue to operate MSWLF units.

(c) Applicability. Owners and operators of new and existing landfill facilities including a MSWLF unit(s) shall conform to the requirements of this Section as follows:

~~(1) Municipal solid waste landfill units which did not receive solid waste after October 9, 1991 shall comply with the Solid Waste Permit, the Conditions of Permit, and Rule .0510.~~

~~(2) MSWLF units that received solid waste after October 9, 1991 but stopped receiving waste before October 9, 1993 shall comply with the Solid Waste Permit, the Conditions of Permit, and Rule .0510. The cap system shall be installed by October 9, 1994 and shall meet the criteria set forth in Subparagraph (e)(1) of Rule .1627 of this Section. Owners or operators of MSWLF units that fail to complete cover installation by this date will be subject to all of the requirements applicable to existing MSWLFs.~~

(3) Effective dates.

(A) All MSWLF units that receive waste on or after October 9, 1993, except those units that qualify for an exemption as specified in Part (c)(3)(B) of this Rule shall comply with the requirements of this Section.

~~(B) A MSWLF unit that meets the conditions in Subparts (i) through (vi) of this Subparagraph is exempt from the requirements of Section .1600 other than Rule .1627. This exemption shall not be effective unless the amendment to the federal rule 40 CFR Part 258.1 (e)(1) and (2) extending the effective dates is published in the Federal Register as a final rule.~~

~~(i) The MSWLF unit disposed of 100 tons per day or less of solid waste between October 9, 1991 and October 9, 1992.~~

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

~~(iii) The MSWLF unit is not on the National Priorities List (NPL) as found in Appendix B to 40 CFR Part 300, which is hereby incorporated by reference including any subsequent amendments and editions. Copies of this material are available for inspection and may be obtained at the Department of Environment, Health, and Natural Resources, Division of Solid Waste Management, 401 Oberlin Road, Raleigh, N.C. at no cost.~~

**Commented [A1]:** All 1600 rules need updating to reflect recent 'life of site' allowance. All references to 'new' / 'existing' landfill need to be updated/eliminated.

~~(iv) The MSWLF unit owner and operator shall notify the Division by November 1, 1993, that they shall stop receiving waste at their MSWLF unit before April 9, 1994. Notification to the Division shall include a statement of compliance with all conditions specified in Part (e)(3)(B) of this Rule.~~

~~(I) If the MSWLF unit is owned or operated by a unit of local government, notification shall be in the form of a Resolution adopted by the Governing Board.~~

~~(II) If the MSWLF unit is privately owned or operated, the notification shall be executed by the owner and operator or in the case of a corporation, by a corporate officer with legal authority to bind the corporation. All signatures shall be properly attested and notarized.~~

~~(v) Waste received at the MSWLF unit shall cease prior to April 9, 1994.~~

~~(vi) MSWLF units which meet all conditions of exemption required within Subparagraph (e)(3) of this Rule shall complete installation of the cap system in accordance with Subparagraph (e)(1) of Rule .1627 of this Section by October 9, 1994.~~

~~(4) MSWLF units failing to satisfy the requirements of this Section constitute open dumps, which are prohibited under Section 4005 of RCRA. Closure of open dumps that receive household waste shall meet the requirements of this Section.~~

(d) The owner or operator of a MSWLF facility shall comply with any other applicable Federal and State laws, rules, regulations, or other requirements.

*History Note: Filed as a Temporary Amendment Eff. October 9, 1993, for a period of 180 days or until the permanent rule becomes effective, whichever is sooner;*

*Authority G.S. 130A-294;*

*Eff. October 9, 1993;*

*Amended Eff. April 1, 1994.*



## 15A NCAC 13B .1602 DEFINITIONS

This Rule contains definitions for terms that appear throughout this Section; additional definitions appear in the specific Rules to which they apply.

- (1) "Active life" means the period of operation beginning with the initial receipt of solid waste and ending at completion of closure activities in accordance with Rule .1627 of this Section.
- (2) "Active portion" means that part of a facility or unit that has received or is receiving wastes and that has not been closed in accordance with Rule .1627 of this Section.
- (3) "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.
- (4) "Base liner system" means the liner system installed on the MSWLF unit's foundation to control the flow of leachate.
- (5) "Cap system" means a liner system installed over the MSWLF unit to minimize infiltration of precipitation and contain the wastes.
- (6) "Commercial solid waste" means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial wastes.
- (7) "Existing MSWLF unit" means any municipal solid waste landfill unit that is receiving solid waste as of October 9, 1993 and is not a new MSWLF unit. Waste placement in existing units must be consistent with past operating practices or modified practices to ensure good management.
- (8) "Ground water" means water below the land surface in a zone of saturation.
- (9) "Hazardous Waste" means a solid waste as defined in G.S. 130A-290 (a)(8). "Hazardous Waste" does not include those solid wastes excluded from regulation pursuant to 40 CFR 261.4, incorporated by reference in 15A NCAC 13A .0006. "Hazardous Waste" does include hazardous waste generated by conditionally exempt small quantity generators as defined in 40 CFR 261.5, incorporated by reference in 15A NCAC 13A .0006.
- (10) "Household waste" means any solid waste derived from households including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas.
- (11) "Industrial solid waste" means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of RCRA. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.
- (12) "Landfill facility" means all contiguous land and structures, other appurtenances, and improvements on the land within the legal description of the site included in or proposed for the Solid Waste Permit. Existing facilities are those facilities which were permitted by the Division prior to October 9, 1993. Facilities permitted on or after October 9, 1993 are new facilities.

**Commented [A1]:** Definitions need updating to reflect current rules and state of practice. For example eliminate Rule 7, 12 and 18.

- (13) "Landfill unit" means a discrete area of land or an excavation that receives solid waste, and is not a land application unit, surface impoundment, injection well, or waste pile, as defined under 40 CFR Part 257. Such a landfill may be publicly or privately owned.
- (14) "Lateral expansion" means a horizontal expansion of the waste boundaries of an existing MSWLF unit.
- (15) "Leachate" means a liquid that has passed through or emerged from solid waste and contains soluble, suspended, or miscible materials removed from such waste.
- (16) "Liner system" means an engineered environmental control system which can incorporate filters, drainage layers, compacted soil liners, geomembrane liners, piping systems, and connected structures.
- (17) "Municipal solid waste landfill unit" means a discrete area of land or an excavation that receives household waste, and is not a land application unit, surface impoundment, injection well, or waste pile, as defined under 40 CFR Part 257. Such a landfill may be publicly or privately owned. A MSWLF unit may also be permitted to receive other types of non-hazardous solid waste. A MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion.
- (18) "New MSWLF unit" means any municipal solid waste landfill unit that has not received waste prior to October 9, 1993.
- (19) "Open burning" means the combustion of solid waste without:
- (a) Control of combustion air to maintain adequate temperature for efficient combustion;
  - (b) Containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion; and
  - (c) Control of the emission of the combustion products.
- (20) "Project engineer" means the official representative of the permittee who is licensed to practice engineering in the State of North Carolina, who is responsible for observing, documenting, and certifying that activities related to the quality assurance of the construction of the solid waste management facility conforms to the Division approved plan, the permit to construct and the Rules specified in this Section. All certifications must bear the seal and signature of the professional engineer and the date of certification.
- (21) "Run-off" means any rainwater that drains over land from any part of a facility.
- (22) "Run-on" means any rainwater that drains over land onto any part of a facility.
- (23) "Uppermost aquifer" means the geologic formation nearest the natural ground surface that is an aquifer, as well as, lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary.
- (24) "Waste management unit boundary" means a vertical surface located at the hydraulically downgradient limit of the unit. This vertical surface extends down into the uppermost aquifer.

*History Note: Authority G.S. 130A-294;  
Eff. October 9, 1993.*

## 15A NCAC 13B .1603 GENERAL APPLICATION REQUIREMENTS AND PROCESSING

(a) Applicability. An owner and operator of a proposed or existing facility shall submit an application document as detailed in Rule .1617 of this Section according to the criteria and scheduling requirements set forth in this Paragraph.

(1) New facility. An owner and operator proposing to establish a MSWLF facility according to the following criteria shall submit a Site Study and subsequently, an application for a permit to construct as set forth in Paragraph (a) of Rule .1617.

(A) The owner and operator proposes to establish a new facility not previously permitted by the Division.

(B) The owner or operator proposes expanding the landfill facility in order to expand the MSWLF unit boundary approved in accordance with Subparagraph (a)(1) of Rule .1618.

(C) The owner or operator of an existing facility is scheduled to close an existing MSWLF unit not constructed with a base liner system and proposes to establish a new MSWLF unit.

(D) A transfer of facility ownership is proposed.

(E) A substantial change to the waste stream defined in the effective permit.

(2) Amendment to the permit. A permit to construct issued in accordance with Paragraph (c) of this Rule approves a facility plan for the life of the MSWLF facility and a set of plans for the initial phase of landfill development. The owner and operator shall prepare an application to amend the permit to construct for any subsequent phase of landfill development in accordance with Paragraph (b) of Rule .1617 and submit the application:

(A) At least 180 days prior to the date scheduled for commencing construction; or

(B) Five years from the issuance date of the initial permit to construct or the most recent amendment, whichever occurs first.

(3) Modifications to the permit. An owner or operator proposing changes to the plans approved in the permit shall request prior approval from the Division in accordance with Paragraph (c) of Rule .1617.

(4) Transition for existing facilities.

(A) Existing MSWLF units. The owner and operator of an existing MSWLF unit shall submit an application for continuing operation and closing the MSWLF unit. The application shall be prepared in accordance with Paragraph (d) of Rule .1617 and shall be submitted on or before April 9, 1994. The operation plan required in the transition application shall be prepared and submitted according to Rule .1625 of this Section.

(B) Lateral expansion and new MSWLF units. Construction of a lateral expansion of an existing MSWLF unit or a new MSWLF unit is subject to the application requirements for permit renewal set forth in Subparagraph (5) of this Paragraph, unless the criteria set forth in Part (1)(C) of this Paragraph is applicable.

(5) Permit renewal. The owner and operator shall prepare and submit an application for permit renewal in accordance with Paragraph (e) of Rule .1617 and the following:

(A) The following criteria is established for the scheduling permit renewal:

(i) Location of the MSWLF unit conforms to the requirements set forth in Items (1), (2), (3), (4), (5), and (6) of Rule .1622;

Commented [A1]: All references to a 5 year permit review or 5 year phases need to be modified throughout .1600 rule.

- (ii) Construction of the MSWLF unit is approved by the effective permit or the requirements of Subparagraph (b)(1) of Rule .1624; and
- (iii) Updated operation, closure and post-closure, and monitoring plans meet the requirements set forth in this Section.

(B) An owner or operator that demonstrates compliance with the criteria set forth in Part (A) of this Subparagraph shall submit an application five years from the issuance date of the original permit to construct or at least 180 days prior to the date scheduled for constructing a phase of landfill development not approved in the effective permit to construct, whichever occurs first.

(C) An owner or operator that cannot demonstrate compliance with the criteria set forth in Part (A) of this Subparagraph shall submit an application at least 180 days prior to the date scheduled for commencing construction of the base liner system.

Commented [A2]: Is this necessary, if not please eliminate.

(b) Application format guidelines. All applications and plans required by this Section shall be prepared in accordance with the following guidelines:

(1) The initial application shall:

- (A) Contain a cover sheet, stating the project title and location, the applicant's name, and the engineer's name, address, signature, date of signature and seal; and
- (B) Contain a statement defining the purpose of the submittal signed and dated by the applicant.

(2) The text of the application shall:

- (A) Be submitted in a three ring binder;
- (B) Contain a table of contents or index outlining the body of the application and the appendices;
- (C) Be paginated consecutively; and
- (D) Identify revised text by noting the date of revision on the page.

(3) Drawings. The engineering drawings for all landfill facilities shall be submitted using the following format:

- (A) The sheet size with title blocks shall be at least 22 inches by 34 inches.
- (B) The cover sheet shall include the project title, applicant's name, sheet index, legend of symbols, and the engineer's name, address, signature, date of signature, and seal.
- (C) Where the requirements do not explicitly specify a minimum scale, maps and drawings shall be prepared at a scale which adequately illustrates the subject requirement(s).

(4) Number of copies. An applicant shall submit a minimum of five copies of each original application document and any revisions to the Division. The Division may request additional copies as necessary.

Commented [A3]: Please update relative to electronic submissions.

(c) Permitting and public information procedures.

(1) Purpose, Scope and Applicability.

(A) Purpose. The permitting process shall provide for public review of and input to permit documents containing the applicable design and operating conditions and shall provide for consideration of comments received and notification to the public of the final permit design.

(B) Scope. Public participation in the permitting process shall ensure that the public is informed regarding decisions affecting the management of MSWLFs located in their community. Public comment regarding permit renewals for

existing facilities shall be limited to new information pertinent to the permit to construct a lateral expansion or a new MSWLF ~~unit~~.

(C) Applicability. Applications for Permit to Construct a new facility or permit renewals for an existing facility or a modification to the permit involving corrective remedy selection required by Rule .1636 of this Section shall be subject to the requirements of this Paragraph. Applications submitted in accordance with Subparagraphs (a)(2), (a)(3), and (a)(4)(A) of this Rule are not subject to the requirements of this Paragraph.

(2) Draft Permits.

(A) Once an application is complete, the Division shall ~~tentatively~~ decide whether the draft permit should be issued or denied.

(B) If the Division decides the draft permit should be denied, a notice to deny shall be sent to the applicant. Reasons for permit denial shall be in accordance with Rule .0203(e) of this Subchapter.

(C) If the Division ~~tentatively~~ decides the permit should be issued, a draft permit shall be prepared.

(D) A draft permit shall contain (either expressly or by reference) all applicable terms and conditions for the permit.

(E) All draft permits shall be subject to the procedures of Subparagraphs (3), (4), (5), (6), (7) and (8) of this Paragraph, unless otherwise specified in those Subparagraphs.

(3) Fact Sheets.

(A) A fact sheet shall be prepared for every draft permit or notice to deny the permit.

(B) The fact sheet shall briefly set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit to include, when applicable:

(i) A brief description of the type of facility or activity which is the subject of the draft permit;

(ii) The type and quantity of wastes which are proposed to be or are being disposed of;

(iii) A brief summary of the basis for the draft permit conditions including references to applicable statutory or regulatory provisions and appropriate supporting references to the permit application;

(iv) A description of the procedures for reaching a final decision on the draft permit, including:

(I) The beginning and ending dates of the comment period under Subparagraph (4) of this Paragraph and the address where comments will be received;

(II) Procedures for requesting a public hearing; and

(III) Any other procedures by which the public may participate in the final decision; and

(v) Name and telephone number of a person to contact for additional information.

(C) The Division shall send this fact sheet to the applicant and, upon request to any other person.

(4) Public Notice of Permit Actions and Public Comment Period.

(A) Scope.

(i) The Division shall give public notice that the following actions have occurred:

- (I) A draft permit has been prepared; or
- (II) A public hearing has been scheduled under Subparagraph (6) of this Paragraph; or
- (III) A notice of intent to deny a permit has been prepared under Part (2)(B) of this Paragraph.

(ii) No public notice is required when a request for a permit modification is denied.

(iii) Written notice of denial shall be given to the permittee.

(iv) Public notices may describe more than one permit or permit action.

(B) Timing.

(i) Public notice of the preparation of a draft permit or a notice of intent to deny a permit shall allow at least 45 days for public comment.

(ii) Public notice of a public hearing shall be given at least 15 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 notices may be combined.)

(C) Methods. Public notice of activities described in Subpart (A)(i) of this Subparagraph shall be given by the following:

(i) By posting in the post office and public places of the municipalities nearest the site under consideration; or

(ii) By publication of a notice in a daily or weekly local newspaper of general circulation; and

(iii) By any other method deemed necessary or appropriate by the Division to give actual notice of the activities to persons potentially affected.

(D) Contents.

(i) General Public Notices. All public notices issued under this Part shall contain the following minimum information:

(I) Name, address and phone number of the office processing the permit action for which notice is being given;

(II) Name and address of the permittee or permit applicant and, if different, of the facility or activity regulated by the permit;

(III) A brief description of the business conducted at the facility or activity described in the permit application including the size and location of the facility and type of waste accepted;

(IV) A brief description of the comment procedures required by Subparagraphs (5) and (6) of this Paragraph, including a statement of procedures to request a public hearing (unless a hearing has already been scheduled), and other procedures by which the public may participate in the final permit decision;

(V) Name, address, and telephone number of a person from whom interested persons may obtain further information, including copies of draft permits and fact sheets;

Commented [A4]: Review language in this section to assure clarity of the process.

(VI) A description of the time frame and procedure for making a final determination on this facility application approval or disapproval;

(VII) Any additional information considered necessary or proper as required by the Division.

(ii) Public Notices for Public Hearing. In addition to the general public notice described in Subpart (i) of this Part, the public notice of a public hearing shall contain the following information:

(I) Reference to the dates of previous public notices relating to the permit action;

(II) Date, time, and place of the public hearing; and

(III) A brief description of the nature and purpose of the public hearing, including the applicable rules and procedures; and

(IV) A concise statement of the issues raised by the persons requesting the hearing.

(5) Public Comments and Requests for Public Hearings. During the public comment period provided, any interested person may submit written comments on the draft permit and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. All comments shall be considered in making the final decision and shall be answered as provided in Subparagraph (9) of this Paragraph.

(6) Public Hearings.

(A) Public Hearing Criteria.

(i) The Division ~~shall~~ may hold a public hearing whenever on the basis of requests, a significant degree of public interest in a draft permit(s) is determined.

(ii) The Division may also hold a public hearing at its discretion whenever such a hearing might clarify one or more issues involved in the permit decision.

(iii) Public hearings held pursuant to this Rule shall be at a location convenient to the nearest population center to the subject facility.

(iv) Public notice of the hearing shall be given as specified in Subparagraph (4) of this Paragraph.

(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 may be required. The public comment period under Subparagraph (4) of this Paragraph shall ~~automatically~~ be extended to the close of any public hearing under this Subparagraph if the public comment period has expired. The hearing officer may also extend the comment period by so stating at the hearing.

(C) A tape recording or written transcript of the hearing shall be made available to the public.

(7) Reopening of the Public Comment Period.

(A) If any data, information, or arguments submitted during the public comment period appear to raise substantial new questions concerning a permit action, the Division may take one or more of the following actions:

- (i) Prepare a new draft permit, appropriately modified, under Subparagraph (2) of this Paragraph;
- (ii) Prepare a fact sheet or revised fact sheet under Subparagraph (3) of this Paragraph and reopen the comment period under Subparagraph (4) of this Paragraph; or
- (iii) Reopen or extend the comment period under Subparagraph (4) of this Paragraph to give interested persons an opportunity to comment on the information or arguments submitted.

(B) Comments filed during the reopened comment period shall be limited to the substantial new questions that caused its reopening. The public notice under Subparagraph (4) of this Paragraph shall define the scope of the reopening.

(C) Public notice of any of the actions of this Subparagraph shall be issued under Subparagraph (4) of this Paragraph.

(8) Final Permit Decision.

(A) After the close of the public comment period under Subparagraph (4) of this Paragraph on a draft permit or a notice of intent to deny a permit, the Division shall issue a final permit decision. The Division shall notify the applicant and each person who has submitted a written request for notice of the final permit decision. For the purposes of this Subparagraph, a final permit decision means a final decision to issue, deny or modify a permit.

(B) A final permit decision shall become effective upon the date of the service of notice of the decision unless a later date is specified in the decision.

(9) Response to Comments.

(A) At the time that a final permit decision is issued under Subparagraph (8) of this Paragraph, the Division shall issue a response to comments. This response shall:

- (i) Specify which provisions, if any, of the draft permit have been changed in the final permit decision, and the reasons for the change; and
- (ii) Briefly describe and respond to all significant comments on the draft permit raised during the public comment period, or during any public hearing.

(B) The response to comments shall be made available to the public.

(d) Permit approval or denial.

(1) The Division shall review all permit applications in accordance with Rule .0203 of Section .0200.

~~(2) Transition for existing facilities. The Division shall review applications submitted in accordance with Paragraph (d) of Rule .1617 according to the following schedule and criteria:~~

~~(A) The Division shall establish a review schedule for the plans which determines the adequacy of 50 percent of the plans by October 9, 1994 and 100 percent of the plans by October 9, 1996.~~

~~(B) The Division may issue partial approval for specific parts of an application.~~

~~(C) The Division shall determine the schedule for closing an existing MSWLF unit based on its review of the complete transition application and the following factors:~~

- ~~(i) Proximity of human and environmental receptors;~~

Commented [A5]: Refer to language changes in section .0203.



- ~~(ii) Design of the MSWLF unit;~~
- ~~(iii) Age of the MSWLF unit;~~
- ~~(iv) The size of the MSWLF unit;~~
- ~~(v) Type and quantities of waste disposed including sewage sludge;~~
- ~~(vi) Compliance record of the owner and operator;~~
- ~~(vii) A schedule for fulfilling the intent of the landfill design standards set forth in Rule .1624 of this Section; and~~
- ~~(viii) Resource value of the underlying aquifer, including, current and future uses; proximity and withdrawal rate of users; and ground water quality and quantity.~~

**Commented [A6]:** This section is unnecessary.

*History Note: Authority G.S. 130A-294;  
Eff. October 9, 1993.*

**15A NCAC 13B .1604 GENERAL REQUIREMENTS FOR MSWLF FACILITIES**

(a) Applicability. Permits issued by the Division for new and existing MSWLF facilities are subject to the requirements set forth in this Rule.  
(b) Terms of the Permit. The Solid Waste Management Permit shall incorporate requirements necessary to comply with this Subchapter and the North Carolina Solid Waste Management Act including the provisions of this Paragraph.

(1) Division Approved Plan. Permits issued ~~subsequent to March 9, 1993~~ shall incorporate a Division approved plan.

(A) The scope of the Division approved plan shall be limited to the information necessary to comply with the requirements set forth in Rule .1617 of this Section.

(B) The Division approved plans are subject to and may be limited by the conditions of the permit.

(C) The Division approved plans for a new facility or permit renewal of an existing facility shall be described in the permit and shall include the following:

- (i) Facility plan;
- (ii) Engineering plan and Construction Quality Assurance Plan;
- (iii) Operation plan;
- (iv) Monitoring plan; and
- (v) Closure and post-closure plan.

(2) Permit provisions. All disposal facilities shall conform to the conditions set forth in the permit and the following provisions. ~~Nothing in this Subparagraph shall be construed to limit the conditions the Division may otherwise impose on a permit:~~

(A) **Duty to Comply**. The permittee shall comply with all conditions of the permit.

(B) **Duty to Mitigate**. In the event of noncompliance with the permit, the permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent adverse impacts on human health or the environment.

(C) **Duty to Provide Information**. The permittee shall furnish to the Division, any relevant information which the Division may request to determine whether cause exists for modifying or revoking this permit, or to determine compliance with this permit. The permittee shall also furnish to the Division, upon request, copies of records required to be kept by this permit.

(D) Recordation Procedures. The permittee shall comply with the requirements of Rule .0204 in order for a new permit to be effective.

(E) Need to Halt or Reduce Activity Not a Defense. It is not a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(F) Permit Actions. A permit may be modified, revoked and reissued, or terminated for cause in accordance with G.S. 130A-23. The filing of a request by the permittee for a permit modification or termination, or a notification of planned changes or anticipated noncompliance, does not stay any existing permit condition.

(G) No Property Rights. The **Commission** does not intend for a permit to convey any property rights of any sort or any exclusive privilege. A permit is not transferable.

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**Commented [A2]:** Which Commission?

**Commented [A3]:** Please explain the intent of this statement.

(H) Construction. If construction does not commence within 18 months from the issuance date of the permit to construct, or an amendment to the permit, then the permittee shall obtain written approval from the Division prior to construction and comply with any conditions of the approval. In determining whether to approve construction, the division shall consider length of time elapsed since issuance of permit, any changes in applicable state and federal statutes and rules since issuance of the permit, and any changes in financial qualifications or environmental compliance status of the holder of the permit in accordance with G.S. 130A-295.2 and G.S. 130A-295.3.

(I) Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision ~~may require~~ the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

(J) Inspection and Entry. During normal operating hours ~~the~~ permittee shall allow the Division, or an authorized representative, to:

- (i) Enter the permittee's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this permit;
- (ii) Have access to a copy of any records required to be kept under the conditions of this permit;
- (iii) Inspect any facilities, equipment (including monitoring and control equipment), practices or operations regulated by the Division;
- (iv) Sample or monitor for the purposes of assuring permit compliance or as otherwise authorized by the Act, any substances or parameters at any location; and
- (v) Make photographs for the purpose of documenting items of compliance or noncompliance at waste management units, or where

appropriate to protect legitimate proprietary interests, require the permittee to make such photos for the Division.

(K) Monitoring and Records.

- (i) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The permittee shall split any required samples with the Division upon request.
- (ii) The permittee shall retain records of all monitoring information required by the permit for the active life of the facility and for the post-closure care period.
- (iii) Records of monitoring information shall include:
  - (I) The date, place, and time of sampling or measurements;
  - (II) The individual(s) who performed the sampling or measurements;
  - (III) The date(s) analyses were performed;

- (IV) The individual(s) who performed the analyses;
- (V) The analytical techniques or methods used (including equipment used); and
- (VI) The results of such analyses.

(L) Reporting Requirements.

- (i) The permittee shall give notice to the Division as soon as possible of any planned physical alterations or additions to the permitted facility.
- (ii) Monitoring results shall be reported at the intervals specified in the permit.
- (iii) The permittee shall report orally within 24 hours from the time the permittee becomes aware of the circumstances of any release or discharge outside the liner, collection system or other containment component, any fire, or explosion from the permitted landfill facility. Such reports shall be made to the Division representative at the appropriate regional office of the ~~Department of Environment and Natural Resources~~ DEQ.
- (iv) Where the permittee becomes aware that it failed to submit all relevant facts and corrected information in a permit application, or submitted incorrect information in a permit application or in any report to the Division, it shall submit such facts or information.

(M) Survey for Compliance.

- (i) Within 60 days of the permittee's receipt of the Division's written request, the permittee shall cause to be conducted a survey of active or closed portions of their facility in order to determine if operations (e.g., cut and fill boundaries, grades) are being conducted in accordance with the approved design and operational plans. The permittee shall report the results of such survey to the Division within 90 days of receipt of the Division's request. Permittee can substitute existing survey if generated within the past 12 months.
- (ii) A survey may be required by the Division:
  - (I) If there is reason to believe that operations are being conducted in a manner that deviates from the Division approved plans; or
  - (II) As a periodic verification (but no more than annual) that operations are being conducted in accordance with the approved plans.
- (iii) If required by G.S. 89C, any survey performed pursuant to this Part shall be performed by a registered land surveyor duly authorized under North Carolina law to conduct such activities. [Note: The North Carolina Board of Examiners for Engineers and Surveyors has determined, by resolution dated March 31, 2011 that preparation of survey pursuant to this Paragraph constitutes practicing surveying under G.S. 89C.]

(N) Additional Solid Waste Management Facilities. Construction and operation of additional solid waste management facilities at the landfill facility shall not impede operation of the MSWLF unit and shall be approved by the Division.

~~(O) Existing Facilities. Permits issued by the Division prior to October 9, 1993 for the construction of a lateral expansion or a new MSWLF unit are subject to the requirements for permit renewal set forth in Subparagraph (a)(5) of Rule .1603.~~

~~The owner or operator shall establish a schedule for permit renewal that demonstrates compliance with Rule .1603 of this Section.~~

~~The owner or operator shall place the demonstration in the operating record and submit a copy to the Division for approval.~~

*History Note: Authority G.S. 130A-294;*

*Eff. October 9, 1993;*

*Amended Eff. May 1, 2011.*

### 15A NCAC 13B .1617 APPLICATION REQUIREMENTS FOR MSWLF FACILITIES

(a) Permit for a new facility. The owner and operator of a new facility shall meet the requirements of Rule .1618 of this Section prior to submitting an application for a permit to construct.

(1) Permit to Construct. A complete application for a permit to construct shall meet the General Site Conditions and Design Requirements set forth by the Division and shall contain the following:

- (A) A facility plan that describes comprehensive development of the MSWLF facility prepared in accordance with Rule .1619 of this Section;
- (B) An engineering plan that is prepared for the initial phase of landfill development prepared in accordance with Rule .1620 of this Section;
- (C) A construction quality assurance plan prepared in accordance with Rule .1621 of this Section;
- (D) An operation plan prepared in accordance with Rule .1625 of this Section;
- (E) A closure and post-closure plan prepared in accordance with Rule .1629 of this Section; and
- (F) A water quality monitoring plan prepared as set forth in Paragraph (b) of Rule .1623.

(2) Permit to Operate. The owner or operator shall meet the pre-operative requirements of the permit to construct in order to qualify the constructed MSWLF unit for a permit to operate. Construction documentation shall be submitted in a timely and organized manner in order to facilitate the Division's review.

(b) Amendment to the permit. A complete application for an amendment to the permit shall contain:

- (1) An updated engineering plan prepared in accordance with Rule .1620 of this Section;
- (2) An updated construction quality assurance plan prepared in accordance with Rule .1621 of this Section;
- (3) An updated operation plan prepared in accordance with Rule .1625 of this Section;
- (4) An updated closure and post-closure plan prepared in accordance with Rule .1629 of this Section; and
- (5) A updated water quality monitoring plan prepared as set forth in Paragraph (b) of Rule .1623.

(c) Modifications to the permit. The owner or operator may propose to modify plans prepared and approved in accordance with the requirements set forth in this Section. A complete application shall identify the requirement(s) proposed for modification and provide complete information in order to demonstrate compliance with the applicable requirements of this Section.

~~(d) Transition plan for existing MSWLF units. Owners or operators of existing MSWLF units shall submit a transition plan on or before April 9, 1994 that contains:~~

- ~~(1) An operation plan prepared in accordance with Rule .1625 of this Section;~~
- ~~(2) A closure and post closure plan prepared in accordance with Rule .1629 of this Section;~~
- ~~(3) A water quality monitoring plan prepared as set forth in Subparagraph (b)(3) of Rule .1623; and~~
- ~~(4) A report that defines the owner's or operator's plans for continued operation of the existing facility or a new facility for a minimum five year period and incorporates:~~

~~(A) A closure date for the existing MSWLF unit; and  
(B) A schedule for submitting the required permit applications for a new facility, permit renewal or planned use of any MSWLF facility which meets the requirements of Subparagraph (b)(1) of Rule .1624.~~

(e) Permit renewal. A complete application for a permit to construct a lateral expansion or a new MSWLF unit shall contain the following:

- (1) A facility plan that describes comprehensive development of the MSWLF facility prepared in accordance with Rule .1619 of this Section;
- (2) An engineering plan that is prepared for the initial phase of landfill development prepared in accordance with Rule .1620 of this Section;
- (3) A construction quality assurance plan prepared in accordance with Rule .1621 of this Section;
- (4) An operation plan prepared in accordance with Rule .1625 of this Section;
- (5) A closure and post-closure plan prepared in accordance with Rule .1629 of this Section; and
- (6) A water quality monitoring plan prepared as set forth in Paragraph (b) of Rule .1623.

**Commented [A1]:** Update this section to reflect "life of site" rule.

*History Note: Authority G.S. 130A-294;  
Eff. October 9, 1993.*

### **15A NCAC 13B .1618 SITE STUDY FOR MSWLF FACILITIES**

(a) Purpose. As required under Rule .1617 of this Section, the owner and operator shall prepare a site study which meets the requirements of this Rule. The Division shall review the site study for a proposed new facility prior to consideration of an application for a permit to construct.

Following review of the site study, the Division shall notify the applicant that either:

- (1) The site is suitable and the applicant is authorized to prepare an application for a permit to construct in accordance with Rule .1617 and the General Site Conditions and Design Requirements prescribed by the Division; or
- (2) The site is deemed unsuitable for establishing a MSWLF unit and shall specify the reasons which would prevent the MSWLF facility from being operated in accordance with G.S. 130A, Article 9, this Subchapter, and the Federal Act.

(b) Scope. The site is the land which is proposed for the landfill facility. The site study presents a characterization of the land, incorporating various investigations and requirements pertinent to suitability of a MSWLF facility. The scope of the site study includes criteria associated with the public health and welfare, and the environment. The economic feasibility of a proposed site is not within the scope of this study and instead, should be evaluated by the owner or operator prior to submitting a permit application to the Division. The information in the site study shall accurately represent site characteristics and must be prepared by qualified environmental professionals. A qualified environmental professional is a person who has received a baccalaureate or post-graduate degree from a university and has sufficient training and experience in or related to the field of study requiring investigation that enables that person to make sound professional judgements.

(c) The site study prepared for a MSWLF facility shall include the information required by this Paragraph unless as noted in Paragraphs (d) and (e) of this Rule.

- (1) Regional characterization study. The regional study area includes the landfill facility and a two mile perimeter measured from the proposed boundary of the landfill facility.

The study shall include a report and a regional map identifying the following:

- (A) General topography and features as illustrated on the most recent U.S.G.S. Topographic map, 7.5 Minute Series, horizontal scale of at least one inch equals 2000 feet;
- (B) Proposed landfill facility location;
- (C) Public water supply wells, surface water intakes, and service areas;
- (D) Residential subdivisions;
- (E) Waste transportation routes; and
- (F) Public use airports and runways.

- (2) Local characterization study. The local study area includes the landfill facility and a 2000 foot perimeter measured from the proposed boundary of the landfill facility. The study shall include an aerial photograph taken within one year of the original submittal date, a report, and a local map. The map and photograph shall be at a scale of at least one inch equals 400 feet. The study must identify the following:

- (A) The entire property proposed for the disposal site and any on-site easements;
- (B) Existing land use and zoning;
- (C) The location of private residences and schools;
- (D) The location of commercial and industrial buildings, and other potential sources of contamination;



(E) The location of potable wells and available documentation regarding well completion and production rate;

(F) Historic sites; and

(G) The existing topography and features of the disposal site including: general surface water drainage patterns and watersheds, 100-year floodplains, perennial and intermittent streams, rivers, and lakes.

(3) Site Hydrogeologic Report. The study shall be prepared in accordance with the requirements set forth in Rule .1623 (a) of this Section.

(4) Location Restrictions. A report shall be prepared demonstrating compliance with the criteria in Rule .1622; the report shall incorporate the proposed facility plan and if applicable, discuss planned compliance with design and construction standards referenced in Rule .1622 (2)(a), (3)(a)(iii), (4)(a), (5)(a), and (6)(a) of this Section.

(5) Local government approvals for municipal solid waste landfills.

(A) If the proposed municipal solid waste landfill site is located within an incorporated city or town, or within the extraterritorial jurisdiction of an incorporated city or town, the approval of the governing board of the city or town shall be required. Otherwise, the approval of the Board of Commissioners having authority in the county which the site is located shall be required. Approval may be in the form of either a resolution or a vote on a motion. A copy of the resolution, or the minutes of the meeting where the vote was taken shall be submitted to the Division as part of the site study.

(i) Prior to approval, the jurisdictional local government where the landfill is to be located shall hold at least one public meeting to inform the community of the proposed waste management activities as described in the proposed facility plan prepared in accordance with Subparagraph (6) of this Paragraph.

(ii) For purposes of this Subpart, public notice shall include: a legal advertisement placed in a newspaper or newspapers serving the county; and provision of a news release to at least one newspaper, one radio station, and one TV station serving the county. Public notice shall include time, place, and purpose of the meetings required by this Subpart.

(iii) The local government where the landfill is to be located shall provide a public notice of the meeting at least 30 days prior to the meeting. Public notice shall be documented in the site study. A tape recording or a written transcript of the meeting, all written material submitted representing community concerns, and all other relevant written material distributed or used at the meeting shall be submitted as part of the site study.

(iv) The complete permit application, written transcripts of all public meetings and any additional material submitted or used at the meetings, and any additions or corrections to the applications, including any responses to notices of deficiencies shall be submitted to the closest local library in the county of the proposed site, with the request that the information be made available to the public until the permit decision is concluded.

(B) A letter from the unit of local government having zoning jurisdiction over the site which states that the proposal meets all the requirements of the local zoning

ordinance, or that the site is not zoned shall be submitted to the Division as part of the site study.

(C) A letter from the unit of local government responsible for the implementation of a comprehensive solid waste management plan approved by the Division [in accordance with G.S. 130A-309.04(e)] setting forth a determination that the operation of the proposed municipal solid waste landfill is consistent with the approved solid waste management plan shall be submitted with the site study.

Commented [A1]: Update this section.

(6) Proposed Facility Plan. A conceptual plan for the development of the facility including drawings and a report must be prepared which incorporates the summary findings of the geologic and hydrogeologic report as set forth in Subparagraph (a)(13) of Rule .1623 and includes the drawings and reports described in Rule .1619 (d)(1), (d)(2), (e)(1), (e)(2), (e)(3), and (e)(5).

(d) An existing facility proposed for designation as a new facility is exempt from the requirements of Subparagraph (c)(5) of this Rule if the site study meets the following criteria:

(1) The facility boundary delineated in accordance with Subparagraph (c)(6) of this Rule is the same boundary described in the current permit; and

(2) The areal limits of the proposed MSWLF unit(s) is within the approved disposal area approved by the current permit.

~~(e) New facility applications in transition. Site plan applications for a new facility submitted in accordance with Rule .0504 (1) of this Section after January 15, 1992 and prior to April 9, 1993 and approved by the Division consistent with Subparagraph (a)(1) of this Rule are not subject to the requirements of this Rule.~~

*History Note: Authority G.S. 130A-294;  
Eff. October 9, 1993.*

### 15A NCAC 13B .1619 FACILITY PLAN

(a) Purpose. As required under Rule .1617 of this Section, a permit applicant shall prepare a facility plan which meets the requirements of this Rule.

(b) Scope.

(1) The facility plan defines comprehensive development of the property proposed for permit or described in the permit of an existing facility. The plan includes a set of drawings and a report which present the long-term, general design concepts related to construction, operation, and closure of the MSWLF unit(s), including leachate management. The scope of the plan spans the active life of the MSWLF unit(s).

Additional solid waste management facilities located at the MSWLF facility shall be identified in the plan and shall meet the requirements of this Subchapter. The facility plan defines the waste stream proposed for management at the MSWLF facility. If different types of landfill units or non-disposal facilities are included in the facility design, the plan must describe general waste acceptance procedures.

(2) The areal limits of the MSWLF unit(s), total capacity of the MSWLF unit(s), and the proposed waste stream shall be consistent with the Division's approval set forth:

- (A) In accordance with Rule .1618 (a)(1) of this Section for a new facility; or
- (B) In accordance with the current permit for an existing facility applying for permit renewal.

(c) Use of Terms. The terminology used in describing areas of the landfill unit shall be defined in the facility plan and shall be used consistently throughout a permit application. The Division recommends the use of the following terms:

(1) A "phase" is an area constructed with a base liner system that provides no more than approximately ~~five~~ years of operating capacity.

(2) A "cell" is a subdivision of a phase which describes modular or partial construction.

(3) A "subcell" is a subdivision of a cell which describes leachate and stormwater management for active or inactive areas of the constructed MSWLF.

(d) Facility Drawings. The facility plan shall include the following drawings:

(1) Site Development. The two drawings which plot site development shall be prepared on a topographic map representative of existing site conditions; the map shall locate the physical features referenced in Rule .1622 of this Section and shall incorporate a survey locating all property boundaries for the proposed landfill facility certified by an individual licensed to practice land surveying in the State of North Carolina.

(A) Landfill units and leachate facilities. This drawing shall delineate the areal limits of all landfill units and leachate facilities and incorporate the buffer requirements set forth in Subparagraph (b)(3) of Rule .1624.

(B) All facilities. This drawing shall locate all solid waste management facilities and facility infrastructure, including landfill units and leachate facilities.

(2) Landfill Construction. All on-site grading activities related to the construction and operation of the MSWLF unit(s) shall be illustrated in facility drawings which:

(A) Delineate the limits of grading, including borrow and stockpile areas;

(B) Define phases of development which do not exceed approximately five years of operating capacity;

(C) Propose base grades for the MSWLF unit(s);

Commented [A1]: Another reference to 5yr phases needs to be reconciled to life of site rules.

(D) Delineate the location of access roads, sedimentation basins, leachate pipeline and storage or treatment facilities and other structures related to the operation of the MSWLF unit; and

(E) Propose final contours for the MSWLF unit(s) and facility features for closure.

(3) Landfill Operation. The following information related to the long-term operation of the MSWLF units shall be included in facility drawings:

(A) General grade and flow direction for the drainage layer component of the leachate collection system;

(B) Size, location, and general grade for the leachate piping system, including on-site pipelines to leachate management facilities;

~~(C) Proposed transitional contours for each phase of development, including operational grades for existing phase(s) and construction grading for the new phase; and~~

(D) If included in the design, stormwater segregation features and details for inactive landfill subcells.

(e) Facility Report. The facility plan shall include the following information:

(1) Waste stream. A discussion of the characteristics of the wastes received at the facility and facility specific management plans shall incorporate:

(A) The types of waste specified for disposal;

~~(B) Average monthly disposal rates and estimated variance;~~

(C) The area served by the facility;

(D) Procedures for segregated management at different on-site facilities; and

(E) Equipment requirements for operation of the MSWLF unit.

(2) Landfill Capacity. An analysis of landfill capacity and soil resources shall be performed.

(A) The data and assumptions used in the analysis shall be:

(i) Consistent with the facility drawings ~~and disposal rates specified in the facility plan;~~ and

(ii) Representative of operational requirements and conditions.

(B) The conclusions shall provide accurate volumetric estimates of:

(i) Total operating capacity;

~~(ii) Operating capacity for each phase of development;~~

(iii) In-place ratio of waste to soil;

(iv) Available soil resources from on-site or specific off-site sources;

(v) Required quantities of soil for landfill construction, operation, and closure; and

(vi) The estimated operating life of all MSWLF units in years.

(3) Containment and environmental control systems. A general description of the systems designed for proper landfill operation, system components, and corresponding functions shall be provided.

(4) Leachate Management. An analysis of the leachate management requirements and plans for the MSWLF facility shall incorporate the information required under this Subparagraph.

(A) The performance of and design concepts for the leachate collection system within active areas of the MSWLF unit and any storm water segregation included in the engineering design shall be described.

(B) Normal operating conditions. Normal operating conditions shall be defined and must consider:

(i) Average monthly values for leachate generation representative of the landfill's environment and operation using:

(I) Empirically derived estimates; or

(II) For landfill expansions, actual leachate generation data from the existing landfill.

(ii) Surge volumes generated by storm events.

(C) Leachate management system. A description of the leachate management system components and their engineered function shall be provided, including:

(i) Leachate pipeline operating capacity;

(ii) Capacity of the storage and if applicable, the treatment facilities; and

(iii) Final disposal plans and applicable discharge limits, including documented prior approval of the waste water treatment plant which may be designated in the plan.

(D) A contingency plan shall be prepared for storm surges or other considerations exceeding design parameters for the storage or treatment facilities.

(5) Special engineering features.

*History Note: Authority G.S. 130A-294;  
Eff. October 9, 1993.*

### 15A NCAC 13B .1620 ENGINEERING PLAN

(a) Purpose. The engineering plan incorporates the detailed plans and specifications relative to the design and performance of the landfill's containment and environmental control systems. This plan sets forth the design parameters and construction requirements for the components of the landfill's systems and establishes the responsibilities of the design engineer. The engineered components are described in Rule .1624 of this Section. ~~As required under Rule .1617 of this Section, the owner or operator shall submit an engineering plan which meets the requirements of this Rule.~~

(b) Responsibilities of the design engineer. The engineering plan shall be prepared by a Professional Engineer licensed to practice engineering in accordance with G.S. 89C and the Administrative Rules developed thereunder. The plan shall meet the requirements of this Rule; the design engineer shall incorporate a statement certifying this fact and bearing his or her seal of registration.

(c) Scope. An engineering plan shall be prepared for a phase of development not to exceed approximately **five years** of operating capacity, consistent with the development phases and design criteria defined in the facility plan. The original and subsequent plans must incorporate the design of leachate management and other environmental control facilities. The engineering plan shall contain a report and a set of drawings which consistently represent the engineering design.

(d) An engineering report must contain:

(1) An analysis of the facility design that conforms to:

- (A) The standards for the foundation and the base liner system set forth in Rule .1624 of this Section;
- (B) The standards for the cap system set forth in Paragraph (c) of Rule .1627 of this Section; and
- (C) The standards for the leachate storage facilities set forth in Rule .1680 of this Section.

(2) A summary of the facility design that includes:

- (A) A discussion of the analytical methods used to evaluate the design;
- (B) Definition of the critical conditions evaluated and assumptions made;
- (C) A list of technical references used in the evaluation; and
- (D) Completion of any applicable location restriction demonstrations in accordance with Rule .1622 of this Section.

(3) A description of the materials and construction practices that conforms to the requirements set forth in Rule .1624 of this Section, and is consistent with the analysis of the facility design prepared in accordance with this Part.

(4) A copy of the Design Hydrogeologic Report prepared in accordance with Paragraph (b) of Rule .1623.

(e) Engineering drawings must clearly illustrate:

- (1) Existing conditions: site topography, features, existing disposal areas, roads, buildings;
- (2) Grading plans: proposed limits of excavation, subgrade elevations, boring locations, intermediate grading for partial construction;
- (3) Base liner system: grades for top of composite liner, slopes, anchor configuration, liner penetration locations and details;

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- (4) Leachate collection system: base elevations, piping system grade and inverts, cleanouts, valves, sumps, top of protective cover elevations, and details;
- (5) Stormwater segregation system: location and detail of features;
- (6) Cap system: base and top elevations, landfill gas collection, infiltration barrier, surface water removal, protective and vegetative cover, and details;
- (7) Temporary and permanent sedimentation and erosion control plans;
- (8) Vertical separation requirements incorporating boring locations, cross sections, the maps prepared in accordance with Rule .1623 (b)(2)(E) and (F) of this Section, and the grading plans; and
- (9) Additional engineering features and details

*History Note: Authority G.S. 130A-294;  
Eff. October 9, 1993.*

**15A NCAC 13B .1622 LOCATION RESTRICTIONS FOR MSWLF FACILITY SITING**

MSWLF units shall comply with the siting criteria set forth in this Rule. In order to demonstrate compliance with specific criteria, documentation or approval by agencies other than the Division of Solid Waste Management may be required. The scope of demonstrations including design and construction performance shall be discussed in a site study and completed in the permit application.

(1) Airport Safety.

- (a) A new MSWLF unit shall be located no closer than 5,000 feet from any airport runway used only by piston-powered aircraft and no closer than 10,000 feet from any runway used by turbine-powered aircraft.
- (b) Owners or operators proposing to site a new MSWLF unit or lateral expansion within a five-mile radius of any airport runway used by turbine-powered or piston-powered aircraft shall notify the affected airport and the Federal Aviation Administration prior to submitting a permit application to the Division.
- (c) The permittee of any existing MSWLF unit or a lateral expansion located within 5,000 feet from any airport runway used by only piston-powered aircraft or within 10,000 feet from any runway used by turbine-powered aircraft shall demonstrate that the existing MSWLF unit does not pose a bird hazard to aircraft. The owner or operator shall place the demonstration in the operating record and notify the Division that it has been placed in the operating record.
- (d) For purposes of this Paragraph:
  - (i) Airport means a public-use airport open to the public without prior permission and without restrictions within the physical capacities of the available facilities.
  - (ii) Bird hazard means an increase in the likelihood of bird/aircraft collisions that may cause damage to the aircraft or injury to its occupants.

Commented [A1]: Please revise per current FAA regulations.

(2) Floodplains.

- (a) New MSWLF units, existing MSWLF units, and lateral expansions shall not be located in 100-year floodplains unless the owners or operators demonstrate that the unit will not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health and the environment.
- (b) For purposes of this Paragraph:
  - (i) "Floodplain" means the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, that are inundated by the 100-year flood.
  - (ii) "100-year flood" means a flood that has a 1-percent or greater chance of recurring in any given year or a flood of a magnitude equalled or exceeded once in 100 years on the average over a significantly long period.
  - (iii) "Washout" means the carrying away of solid waste by waters of the base flood.

(3) Wetlands.

- (a) New MSWLF units and lateral expansions shall not be located in wetlands, unless the owner or operator can make the following demonstrations to the Division:



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

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

(A) Cause or contribute to violations of any applicable State water quality standard;

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

(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 Federal Endangered Species Act of 1973; and

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

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

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

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

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

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

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

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

(iv) To the extent required under Section 404 of the Clean Water Act or applicable State wetlands laws, steps have been taken to attempt to achieve no net loss of wetlands (as defined by acreage and function) by first avoiding impacts to wetlands to the maximum extent practicable as required by Subitem (3)(a)(i) 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 wetlands or creation of man - made wetlands); and

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

(b) For purposes of this Item, wetlands means those areas that are defined in 40 CFR 232.2(r).

(4) Fault Areas.

Commented [A2]: Aren't items in (ii) and (iii) covered in (iv)?

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

(b) For the purposes of this Item:

(i) "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.

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

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

(5) Seismic Impact Zones.

(a) New MSWLF units and lateral expansions shall not be located in seismic impact zones, unless the owner or operator demonstrates to the Division 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.

(b) For the purposes of this Item:

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

(ii) "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.

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

(6) Unstable Areas.

(a) Owners or operators of new MSWLF units, existing MSWLF units, and lateral expansions located in an unstable area shall demonstrate that engineering measures have been incorporated into the MSWLF unit's design to ensure that the integrity of the structural components of the MSWLF unit will not be disrupted. The owner or operator shall consider the following factors, at a minimum, when determining whether an area is unstable:

(i) On-site or local soil conditions that may result in significant differential settling;

(ii) On-site or local geologic or geomorphologic features; and

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

(b) For purposes of this Item:

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

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

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

(iv) "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 MSWLF unit, because of natural or man-induced events, results in the downslope transport of soil and rock material by means of gravitational influence. Areas of mass movement include, but are not limited to, landslides, avalanches, debris slides and flows, soil fluction, block sliding, and rock fall.

(v) "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.

(7) Cultural Resources. A new MSWLF unit or lateral expansion shall not damage or destroy an archaeological or historical property. The Department of Cultural Resources shall determine archeological or historical significance. To aid in making a determination as to whether the property is of archeological or historical significance, the Department of Cultural Resources may request the owner or operator to perform a site-specific survey which shall be included in the Site Study.

(8) State Nature and Historic Preserve. A new MSWLF unit or lateral expansion shall not have an adverse impact on any lands included in the State Nature and Historic Preserve.

(9) Water Supply Watersheds.

(a) A new MSWLF unit or lateral expansion shall not be located in the critical area of a water supply watershed or in the watershed for a stream segment classified as WS-I, in accordance with the rules codified at 15A NCAC 2B .0200 - "Classifications and Water Quality Standards Applicable To Surface Waters Of North Carolina."

(b) Any new MSWLF unit or lateral expansion, which shall discharge leachate to surface waters at the landfill facility and must obtain a National Pollution Discharge Elimination System (NPDES) Permit from the Division of

Environmental Management pursuant to Section 402 of the United States Clean Water Act, shall not be located within watersheds classified as WS-II or WS-III, in accordance with the rules codified at 15A NCAC 2B .0200 - "Classifications and Water Quality Standards Applicable To Surface Waters Of North Carolina."

(10) Endangered and Threatened Species. A new MSWLF unit or lateral expansion shall not jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Federal Endangered Species Act of 1973.

*History Note: Authority G.S. 130A-294;  
Eff. October 9, 1993.*

## **15A NCAC 13B .1623 GEOLOGIC AND HYDROGEOLOGIC INVESTIGATIONS FOR MSWLF FACILITIES**

(a) Site Hydrogeologic Report. An investigation is required to assess the geologic and hydrogeologic characteristics of the proposed site to determine: the suitability of the site for solid waste management activities; which areas of the site are most suitable for MSWLF units; and the general ground-water flow paths and rates for the uppermost aquifer. The report shall provide an understanding of the relationship of the site ground-water flow regime to local and regional hydrogeologic features, with special emphasis on the relationship of MSWLF units to ground-water receptors (especially drinking water wells) and to ground-water discharge features. Additionally, the scope of the investigation shall include the general geologic information necessary to address compliance with the pertinent location restrictions described in Rule .1622 of this Section. The Site Hydrogeologic Report shall provide, at a minimum, the following information:

- (1) A report on local and regional geology and hydrogeology based on research of available literature for the area. This information is to be used in planning the field investigation. For sites located in piedmont or mountain regions, this report shall include a fracture trace analysis and Rose Diagram, based at a minimum on an evaluation of structurally controlled features identified on a topographic map of the area.
- (2) A report on field observations of the site that includes information on the following:
  - (A) Topographic setting, springs, streams, drainage features, existing or abandoned wells, rock outcrops, (including trends in strike and dip), and other features that may affect site suitability or the ability to effectively monitor the site; and
  - (B) Ground-water discharge features. A more extensive hydrogeologic investigation may be required for a proposed site where the owner or operator does not control the property from any landfill unit boundary to the controlling, downgradient, ground-water discharge feature(s).
- (3) Borings for which the numbers, locations, and depths are sufficient to provide an adequate understanding of the subsurface conditions and ground-water flow regime of the uppermost aquifer at the site. The number and depths of borings required will depend on the hydrogeologic characteristics of the site. At a minimum, there shall be an average of one boring for each ten acres of the proposed landfill facility, unless otherwise authorized by the Division. All borings intersecting the water table shall be converted to piezometers or monitoring wells.
- (4) A testing program for the borings which describes the frequency, distribution, and type of samples taken and the methods of analysis (standard ASTM test methods or methods approved by the Division) used to obtain, at a minimum, the following information:
  - (A) Standard penetration - resistance;
  - (B) Particle size analysis;
  - (C) Soil classification: Unified Soil Classification System;
  - (D) Formation descriptions; and
  - (E) Saturated hydraulic conductivity, porosity, and effective porosity for each lithologic unit of the uppermost aquifer.

- (5) In addition to borings, other techniques may be used to investigate the subsurface conditions at the site, including but not limited to: geophysical well logs, surface geophysical surveys, and tracer studies.
- (6) Stratigraphic cross-sections identifying hydrogeologic and lithologic units, and stabilized water table elevations.
- (7) Water table information, including:
- (A) Tabulations of water table elevations measured at the time of boring, 24 hours, and stabilized readings for all borings (measured within a period of time short enough to avoid temporal variations in ground-water flow which could preclude accurate determination of ground-water flow direction and rate);
  - (B) Tabulations of stabilized water table elevations over time in order to develop an understanding of seasonal fluctuations in the water table;
  - (C) An estimation of the long-term seasonal high water table based on stabilized water table readings, hydrographs of wells in the area, meteorological and climatological data, and any other information available; and
  - (D) A discussion of any natural or man-made activities that have the potential for causing water table fluctuations, including tidal variations, river stage changes, flood pool changes of reservoirs, high volume production wells, injection wells, etc.
- (8) The horizontal and vertical dimensions of ground-water flow, including flow directions, rates, and gradients.
- (9) Ground-water contour map(s) to show the occurrence and direction of ground-water flow in the uppermost aquifer, and any other aquifers identified in the hydrogeologic investigation. The ground -water contours shall be superimposed on a topographic map. The location of all borings and rock cores, and the water table elevations or potentiometric data at each location used to generate the ground -water contours shall be shown on the ground-water contour map(s).
- (10) A topographic map of the site locating soil borings with accurate horizontal and vertical control which are tied to a permanent onsite bench mark.
- (11) Boring logs, field logs and notes, well construction records, and piezometer construction records.
- (12) Identification of other geologic and hydrologic considerations, including but not limited to: slopes, streams, springs, gullies, trenches, solution features, karst terranes, sinkholes, dikes, sills, faults, mines, ground - water discharge features, and ground-water recharge/discharge areas.
- (13) A report summarizing the geological and hydrogeological evaluation of the site that includes the following:
- (A) A description of the relationship between the uppermost aquifer of the site to local and regional geologic and hydrogeologic features.
  - (B) A discussion of the ground-water flow regime of the site focussing on the relationship of MSWLF units to ground-water receptors and to ground-water discharge features.
  - (C) A discussion of the overall suitability of the proposed site for solid waste management activities and which areas of the site are most suitable for MSWLF units.

(D) A discussion of the ground-water flow regime of the uppermost aquifer at the site and the ability to effectively monitor the MSWLF units in order to ensure early detection of any release of hazardous constituents to the uppermost aquifer.

(b) Design Hydrogeologic Report.

(1) A geological and hydrogeological report shall be submitted in the application for the Permit to Construct. This report shall contain the information required by Subparagraphs (2) and (3) of this Paragraph. The number and depths of borings required shall be based on the geologic and hydrogeologic characteristics of the landfill facility. At a minimum, there shall be an average of one boring for each 10 acres of the area of investigation, unless otherwise authorized by the Division, where the area of investigation shall be defined by the Division's review of the Site Study and by the scope and purpose of the investigation as follows:

(A) The investigation shall provide adequate information to demonstrate compliance with the vertical separation and foundation standards set forth in Subparagraphs (b)(4) and (b)(7) of Rule .1624 of this Section, and Paragraph (e) of Rule .1680 of this Section.

(B) The report shall include an investigation of the hydrogeologic characteristics of the uppermost aquifer for the proposed phase of landfill development and any leachate surface impoundment or leachate disposal facility. The purpose of this investigation is to provide more detailed and localized data on the hydrogeologic regime for this area in order to design an effective water quality monitoring system.

(2) The Design Hydrogeologic Report shall provide, at a minimum, the following information:

(A) The information required in Subparagraphs (a)(4) through (a)(12) of this Rule.

(B) All technical information necessary to determine the design of the monitoring system as required by Rule .1631(c) of this Section.

(C) All technical information necessary to determine the relevant point of compliance as required by Rule .1631(a)(2)(B) of this Section.

(D) Rock corings (for sites located in the piedmont or mountain regions) for which the numbers, locations, and depths are adequate to provide an understanding of the fractured bedrock conditions and ground-water flow characteristics of at least the upper 10 feet of the bedrock, if necessary to characterize the uppermost aquifer. Testing for the corings shall provide, at a minimum, the following information:

(i) Rock types;

(ii) Recovery values;

(iii) Rock Quality Designation (RQD) values;

(iv) Saturated hydraulic conductivity and secondary porosity values; and

(v) Rock descriptions, including fracturing and jointing patterns, etc.

(E) A ground-water contour map based on the estimated long-term seasonal high water table that is superimposed on a topographic map and includes the location of all borings and rock cores and

the water table elevations or potentiometric data at each location used to generate the ground-water contours.

(F) A bedrock contour map (for sites located in piedmont or mountain regions)(if required under item (D) above) illustrating the contours of the upper surface of the bedrock that is superimposed on a topographic map and includes the location of all borings and rock cores and the top of rock elevations used to generate the upper surface of bedrock contours.

(G) A three dimensional ground-water flow net or several hydrogeologic cross-sections that characterize the vertical ground-water flow regime for this area.

(H) A report on the ground-water flow regime for the area including ground-water flow paths for both horizontal and vertical components of ground-water flow, horizontal and vertical gradients, flow rates, ground-water recharge areas and discharge areas, etc.

(I) A certification by a Licensed Geologist that all borings at the site that have not been converted to permanent monitoring wells will be properly abandoned in accordance with the procedures for permanent abandonment of wells, as delineated in 15A NCAC 2C Rule .0113(a)(2).

(3) A Water Quality Monitoring Plan shall be submitted that contains the following information.

(A) A ground-water monitoring plan including information on the proposed ground-water monitoring system(s), sampling and analysis requirements, and detection monitoring requirements that fulfills the requirements of Rules .1630 through .1637 of this Section.

(i) The Division may require the use of alternative monitoring systems in addition to ground-water monitoring wells at sites:

(I) Where the owner or operator does not control the property from any landfill unit to the ground-water discharge feature(s); or

(II) Sites with hydrogeologic conditions favorable to detection monitoring by alternative methods.

(ii) The ground-water monitoring plan shall provide a detailed discussion of the geologic and hydrogeologic criteria used to determine the number, spacing, location, and screen depths of proposed monitoring wells.

(B) A surface water monitoring plan in accordance with Rule .0602 of Section .0600.

(C) The final water quality monitoring plan shall be certified by a Licensed Geologist to be effective in providing early detection of any release of hazardous constituents (from any point in a MSWLF unit or leachate surface impoundment) to the uppermost aquifer, so as to be protective of public health and the environment.

Commented [A1]: Is this language consistent with the groundwater monitoring program requirements?

*History Note: Authority G.S. 130A-294;  
Eff. October 9, 1993.*



### **15A NCAC 13B .1624 CONSTRUCTION REQUIREMENTS FOR MSWLF FACILITIES**

(a) This Rule establishes the performance standards and minimum criteria for designing and constructing a new MSWLF unit or lateral expansion of existing MSWLF units. Additional standards for the cap system are described in Rule .1627 of this Section.

(b) New MSWLF units and lateral expansions shall comply with the following design and construction criteria:

(1) Base liner system description. The base liner system is constructed on the landfill subgrade and shall be designed to efficiently contain, collect and remove leachate generated by the MSWLF unit. At a minimum, the components of the liner system shall consist of the following.

(A) A Base Liner. The base liner shall consist of one of the following designs.

The design described in Subpart (b)(1)(A)(i) of this Rule is the standard composite liner. If a landfill owner or operator proposes to utilize one of the alternative composite liner designs described in Subparts (b)(1)(A)(ii) and (iii) of this Rule, the owner or operator shall demonstrate through a model that the proposed design will ensure that maximum concentration levels (MCLs) listed in Table 1 will not be exceeded in the uppermost aquifer at the relevant point of compliance as established in Rule .1631(a)(2) of this Section. For these two designs, the Division may waive the site-specific modeling requirement if it can be demonstrated that a previous site for which a model was approved had similar hydrogeologic characteristics, climatic factors and volume and physical and chemical leachate characteristics. If an alternative liner design other than Subparts (b)(1)(A)(ii) and (iii) of this Rule is proposed, the Division shall require site-specific, two-phase modeling as described in Subpart (b)(1)(A)(iv) of this Rule.

(i) A composite liner utilizing a compacted clay liner (CCL). The composite liner is one liner that consists of two components; a geomembrane liner installed above and in direct and uniform contact with a compacted clay liner with a minimum thickness of 24 inches (0.61 m) and a permeability of no more than  $1.0 \times 10^{-7}$  cm/sec. The composite liner shall be designed and constructed in accordance with Subparagraphs (b)(8) and (10) of this Rule.

(ii) A composite liner utilizing a geosynthetic clay liner (GCL). The composite liner is one liner that consists of three components: a geomembrane liner installed above and in uniform contact with a GCL overlying a compacted clay liner with a minimum thickness of 18 inches (0.46 m) and a permeability of no more than  $1.0 \times 10^{-5}$  cm/sec. The composite liner shall be designed and constructed in accordance with Subparagraphs (b)(8), (9), and (10) of this Rule.

(iii) A composite liner utilizing two geomembrane liners. The composite liner consists of three components; two geomembrane liners each with an overlying leachate drainage system designed to reduce the maximum predicted head acting on the lower membrane liner to less than one inch. The lower membrane liner shall overlie a compacted clay liner with a minimum thickness of 12 inches (0.31m) and a permeability of no more than  $1.0 \times 10^{-5}$  cm/sec. The composite liner system shall be designed and constructed in accordance with Subparagraphs (b)(8) and (10) of this Rule.

(iv) An alternative base liner. An alternative base liner system may be approved by the Division if the owner or operator demonstrates through a two-phase modeling approach that the alternative liner design meets the following criteria:

(I) the rate of leakage through the alternative liner system will be less than or equal to the composite liner system defined in Subparts (b)(1)(A)(i) of this Rule; and

(II) the design will ensure that concentration values listed in Table 1 will not be exceeded in the uppermost aquifer at the relevant point of compliance as established in Rule .1631(a)(2) of this Section.

(B) A leachate collection system (LCS). The LCS is constructed directly above the base liner and shall be designed to effectively collect and remove leachate from the MSWLF unit. The secondary function of the LCS is to establish a zone of protection between the base liner and the waste. The LCS shall be designed and constructed in accordance with Subparagraphs (b)(2), (11), (12) and (13) of this Rule.

(2) Leachate collection system design and operation.

(A) The leachate collection system shall be hydraulically designed to remove leachate from the landfill and ensure that the leachate head on the composite liner does not exceed one foot. A means of quantitatively assessing the performance of the leachate collection system must be provided in the engineering plan. The performance analysis must evaluate the flow capacities of the drainage network necessary to convey leachate to the storage facility or off-site transport location. The engineering evaluation shall incorporate the following criteria:

(i) At a minimum, the geometry of the landfill and the leachate collection system shall be designed to control and contain the volume of leachate generated by the 24-hour, 25-year storm.

(ii) The performance analysis shall evaluate the leachate collection system for the flow capacities during conditions when the maximum impingement rate occurs on the LCS. The LCS flow capacity shall be designed to reduce the head on the liner system generated by the 24-hour, 25-year storm to less than one foot within 72 hours after the storm event.

(B) The leachate collection system shall be designed to provide a zone of protection at least 24 inches separating the composite liner from landfilling activities, or shall be subject to approval from the division upon a demonstration of equivalent protection for the liner system.

(C) The leachate collection system shall be designed to resist clogging and promote leachate collection and removal from the landfill.

(D) The leachate collection system shall be operated to remove leachate from the landfill in such a way as to ensure that the leachate head on the composite liner does not exceed one foot under normal operating conditions except in the sump area.

(3) Horizontal separation requirements.

(A) Property line buffer. New MSWLF units at a new facility shall establish a minimum 300-foot buffer between the MSWLF unit and all property lines.

(B) Private residences and wells. All MSWLF units at a new facility shall establish a minimum 500-foot buffer between the MSWLF unit and existing private residences and wells.

(C) Surface waters. All MSWLF units at new facilities shall establish a minimum 50-foot buffer between the MSWLF unit and any stream, river, or lake, unless the owner or operator can demonstrate:

- (i) To the Division that the alternative management of the water and any discharge will adequately protect the public health and environment; and
- (ii) That the construction activities will conform to the requirements of Sections 404 and 401 of the Clean Water Act.

(D) Existing landfill units. An adequate buffer distance shall be established between a new MSWLF unit and any existing landfill units to establish a ground-water monitoring system as set forth in Rule .1631 of this Section.

(E) Existing facility buffers. At a minimum, a lateral expansion or new MSWLF unit at an existing facility shall conform to the requirements of the effective permit.

(4) Vertical separation requirements. A MSWLF unit shall be constructed so that the post settlement bottom elevation of the base liner system is a minimum of four feet above the seasonal high ground-water table and bedrock datum plane contours established in the Design Hydrogeological Report prepared in accordance with Rule .1623(b) of this Section.

(5) Survey control. One permanent benchmark of known elevation measured from a U.S. Geological Survey benchmark shall be established and maintained for each 50 acres of developed landfill, or part thereof, at the landfill facility. This benchmark shall be the reference point for establishing vertical elevation control.

(6) Location coordinates. The North Carolina State Plane (NCSP) coordinates shall be established and one of its points shall be the benchmark of known NCSP coordinates.

(7) Landfill subgrade. The landfill subgrade is the in-situ soil layer(s), constructed embankments, and select fill providing the foundation for construction of the unit. A foundation analysis shall be performed to determine the structural integrity of the subgrade to support the loads and stresses imposed by the weight of the landfill and to support overlying facility components and maintain their integrity of the components. Minimum post-settlement slope for the subgrade shall be two percent. Safety factors shall be specified for facilities located in a Seismic Impact Zones.

(A) Materials required. The landfill subgrade shall be adequately free of organic material and consist of in-situ soils or a select fill approved by the Division in accordance with the performance standards contained in Subparagraph (b)(7) of this Rule.

(B) Construction requirements.

(i) The landfill subgrade shall be graded in accordance with the approved plans and specifications, which are incorporated into the permit to construct in accordance with Rule .1604(b) of this Section.

(ii) The owner or operator of the MSWLF units may be required by the permit to notify the Division's hydrogeologist and inspect the subgrade when excavation is completed or if bedrock or other unpredicted subsurface conditions are encountered during excavation.

(C) Certification requirements. At a minimum, the subgrade surface shall be inspected in accordance with the following requirements:

(i) Before beginning construction of the base liner system, the project engineer shall visually inspect the exposed surface to evaluate the suitability of the subgrade and document that the surface is properly prepared and that the elevations are consistent with the approved engineering plans incorporated into the permit to construct in accordance with Rule .1604(b) of this Section;

(ii) The subgrade shall be proof-rolled using procedures and equipment specified by the design or project engineer; and

(iii) The subgrade shall be tested for density and moisture content at a minimum frequency as specified in the plans incorporated into the permit to construct in accordance with Rule .1604(b) of this Section.

(8) Compacted clay liners. Compacted clay liners are low permeability barriers designed to control fluid migration in a cap liner system or base liner system.

(A) Materials required. The soil materials used in constructing a compacted clay liner may consist of on-site or off-site sources, or a combination of sources; sources may possess adequate native properties or may require bentonite conditioning to meet the permeability requirement. The soil material shall be free of particles greater than three inches in any dimension.

(B) Construction requirements. Construction methods for the compacted clay liner shall be based upon the type and quality of the borrow source and shall be verified in the field by constructing test pad(s). The project engineer shall ensure that the compacted clay liner installation conforms with the Division approved plans including the following minimum requirements:

(i) A test pad shall be constructed prior to beginning installation of the compacted clay liner and whenever there is a significant change in soil material properties. The area and equipment, liner thickness, and subgrade slope and conditions shall be representative of full scale construction. Acceptance and rejection criteria shall be verified for the tests specified in accordance with Part (C) of this Subparagraph. For each lift, a minimum of three test locations shall be established for testing moisture content, density, and a composite sample for recompacted lab permeability. At least one Shelby tube sample for lab permeability testing, or another in-situ

test that is approved by the Division as equivalent for permeability determination shall be obtained per lift.

(ii) Soil conditioning, placement, and compaction shall be maintained within the range identified in the moisture-density-permeability relation developed in accordance with Subparagraph (C) of this Paragraph.

(iii) The final compacted thickness of each lift shall be a maximum of six inches.

(iv) Prior to placement of successive lifts, the surface of the lift in place shall be scarified or otherwise conditioned to eliminate lift interfaces.

(v) The final lift shall be protected from environmental degradation.

(C) Certification requirements. The project engineer shall include in the construction quality assurance report a discussion of all quality assurance and quality control testing required in this Subparagraph. The testing procedures and protocols shall be submitted in accordance with Rule .1621 of this Section and approved by the Division. The results of all testing shall be included in the construction quality assurance report including documentation of any failed test results, descriptions of the procedures used to correct the improperly installed material, and statements of all retesting performed in accordance with the Division approved plans including the following requirements:

(i) At a minimum, the quality control testing for accepting materials prior to and during construction of a compacted clay liner shall include: particle size distribution analysis, Atterberg limits, triaxial cell laboratory permeability, moisture content, percent bentonite admixed with soil, and the moisture-density-permeability relation. The project engineer shall certify that the materials used in construction were tested according to the Division approved plans.

(ii) At a minimum, the quality assurance testing for evaluating each lift of the compacted clay liner shall include: moisture content and density, and permeability testing. For each location the moisture content and density shall be compared to the appropriate moisture-density-permeability relation. The project engineer shall certify that the liner was constructed using the methods and acceptance criteria consistent with test pad construction and tested in accordance with the plans incorporated into the permit to construct in accordance with Rule .1604(b) of this Section.

(iii) Any tests resulting in the penetration of the compacted clay liner shall be repaired using bentonite or as approved by the Division.

(9) Geosynthetic Clay liners. Geosynthetic clay liners are geosynthetic hydraulic barriers manufactured in sheets and installed by field seaming techniques.

(A) Materials required. Geosynthetic clay liners shall consist of natural sodium bentonite clay or equivalent, encapsulated between two geotextiles or adhered to a geomembrane. The liner material and any seaming materials shall have chemical and physical resistance not adversely affected by environmental exposure, waste placement, leachate generation and subgrade moisture composition. Accessory bentonite, used for seaming, repairs and penetration seaming shall be made from the same sodium bentonite as used in the geosynthetic clay liner or as

recommended by the manufacturer. The type of geosynthetic clay liner shall be approved by the Division according to the criteria set forth in this Part.

(i) Reinforced geosynthetic clay liners shall be used on all slopes greater than 10H:IV.

(ii) The geosynthetic clay liner material shall have a demonstrated hydraulic conductivity of not more than  $5 \times 10^{-9}$  cm/sec under the anticipated confining pressure.

(B) Design and Construction requirements. The design engineer shall ensure that the design of the geosynthetic clay liner installation conforms to the requirements of the manufacturer's recommendations and the Division approved plans. The Division approved plans shall provide for and include the following provisions:

(i) The surface of the supporting soil upon which the geosynthetic clay liner will be installed shall be reasonably free of stones, organic matter, protrusions, loose soil, and any abrupt changes in grade that could damage the geosynthetic clay liner;

(ii) Materials placed on top of the GCL shall be placed in accordance with the plans incorporated into the permit to construct in accordance with Rule .1604(b) of this Section. Equipment used to install additional geosynthetics shall be specified by the design engineer and as recommended by the manufacturer. A minimum of 12 inches of separation between the application equipment and the geosynthetic clay liner shall be provided when applying soil materials;

(iii) Materials that become prematurely hydrated shall be removed, repaired, or replaced, as specified by the project engineer and in accordance with the plans incorporated into the permit to construct prepared in accordance with Rule .1604(b) of this Section;

(iv) Field seaming preparation and methods, general orientation criteria, and restrictive weather conditions;

(v) Anchor trench design;

(vi) Critical tensile forces and slope stability, including seismic design;

(vii) Protection from environmental damage; and

(viii) Physical protection from the materials installed directly above the geosynthetic clay liner.

(C) Certification requirements.

(i) Before beginning installation of the geosynthetic clay liner, the project engineer shall visually inspect the exposed surface to evaluate the suitability of the subgrade and document that the surface is properly prepared and that the elevations are consistent with the approved engineering plans incorporated into the permit to construct in accordance with Rule .1604 (b) of this Section.

(ii) The project engineer shall ensure that the geosynthetic clay installation conforms to the requirements of the manufacturer's recommendations and the plans incorporated into the permit to construct in accordance with Rule .1604 (b) of this Section.

(iii) The project engineer shall include in the construction quality assurance report a discussion of quality assurance and quality control

testing to document that material is placed in accordance with plans incorporated into the permit to construct in accordance with Rule .1604(b) of this Section.

(iv) The project engineer shall include in the construction quality assurance report a discussion of the approved data resulting from the quality assurance and quality control testing required in this Subparagraph.

(v) The testing procedures and protocols for field installation shall be submitted in accordance with Rule .1621 of this Section and approved by the Division.

(vi) The results of all testing shall be included in the construction quality assurance report, including documentation of any failed test results, descriptions of the procedures used to correct the improperly installed material, and performance documentation of all retesting, in accordance with the plans incorporated into the permit to construct in accordance with Rule .1604 (b) of this Section, including the following:

(I) Quality control testing of the raw materials and manufactured product;

(II) Field and independent laboratory destructive testing of geosynthetic clay liner samples;

(III) Documentation prepared by the project engineer in accordance with Subpart (b)(9)(C)(i) of this Rule.

(10) Geomembrane liners. Geomembrane liners are geosynthetic hydraulic barriers manufactured in sheets and installed by field seaming techniques.

(A) Materials required. The liner material and any seaming materials shall have chemical and physical resistance not adversely affected by environmental exposure, waste placement and leachate generation. The type of geomembrane shall be approved by the Division according to the criteria set forth in this Part.

(i) High density polyethylene geomembrane liners shall have a minimum thickness of 60 mils.

(ii) The minimum thickness of any geomembrane approved by the Division shall be greater than 30 mils.

(B) Construction requirements. The project engineer shall ensure that the geomembrane installation conforms to the requirements of the manufacturer's recommendations and the Division approved plans including the following:

(i) The surface of the supporting soil upon which the geomembrane will be installed shall be reasonably free of stones, organic matter, protrusions, loose soil, and any abrupt changes in grade that could damage the geomembrane;

(ii) Field seaming preparation and methods, general orientation criteria, and restrictive weather conditions;

(iii) Anchor trench design;

(iv) Critical tensile forces and slope stability;

(v) Protection from environmental damage; and

(vi) Physical protection from the materials installed directly above the geomembrane.

(C) Certification requirements. The project engineer shall include in the construction quality assurance report a discussion of the approved data resulting from the quality assurance and quality control testing required in this Subparagraph. The testing procedures and protocols for field installation shall be submitted in accordance with Rule .1621 of this Section and approved by the Division. The results of all testing shall be included in the construction quality assurance report including documentation of any failed test results, descriptions of the procedures used to correct the improperly installed material, and statements of all retesting performed in accordance with the plans incorporated into the permit to construct in accordance with Rule .1604(b) of this Section, including the following:

- (i) Quality control testing of the raw materials and manufactured product;
- (ii) At a minimum, test seams shall be made upon each start of work for each seaming crew, upon every four hours of continuous seaming, every time seaming equipment is changed or if significant changes in geomembrane temperature and weather conditions are observed;
- (iii) Nondestructive testing of all seams; and
- (iv) Field and independent laboratory destructive testing of seam samples.

(11) Leachate collection pipes. A leachate collection pipe network shall be a component of the leachate collection system and shall be hydraulically designed to convey leachate from the MSWLF unit to an appropriately sized leachate storage or treatment facility or a point of off-site transport. Leachate collection piping shall comply with the following:

(A) Materials required.

- (i) The leachate collection piping shall have a minimum nominal diameter of six inches.
- (ii) The chemical properties of the pipe and any materials used in installation shall not be adversely affected by waste placement or leachate generated by the landfill.
- (iii) The physical properties of the pipe shall provide adequate structural strength to support the maximum static and dynamic loads and stresses imposed by the overlying materials and any equipment used in construction and operation of the landfill. Specifications for the pipe shall be submitted in the engineering report.

(B) Construction requirements.

- (i) Leachate collection piping shall be installed according to the plans incorporated into the permit to construct in accordance with Rule .1604(b) of this Section.
- (ii) The location and grade of the piping network shall provide access for periodic cleaning.
- (iii) The bedding material for the leachate collection pipe shall consist of a coarse aggregate installed in direct contact with the pipe. The aggregate shall be chemically compatible with the leachate generated and shall be placed to provide adequate support to the pipe. The bedding material for main collector lines shall be extended to and in direct contact with the waste layer or a graded soil or granular filter.



(C) Certification requirements. The project engineer shall include in the construction quality assurance report a discussion of the quality assurance and quality control testing to ensure that the material is placed according to the approved plans. The testing procedures and protocols for field installation shall be submitted in accordance with Rule .1621 of this Section and approved by the Division. The results of all testing shall be included in the construction quality assurance report including documentation of any failed test results, descriptions of the procedures used to correct the improperly installed material, and statements of all retesting performed in accordance with plans incorporated into the permit to construct in accordance with Rule .1604(b) of this Section, including the following:

- (i) All leachate piping installed from the MSWLF unit to the leachate storage or treatment facility shall be watertight.
- (ii) The seal where the piping system penetrates the geomembrane shall be inspected and non-destructively tested for leakage.

(12) Drainage layers. Any soil, granular, or geosynthetic drainage nets used in the leachate collection system shall conform to the following requirements:

(A) Materials required.

- (i) The chemical properties of the drainage layer materials shall not be adversely affected by waste placement or leachate generated by the landfill.
- (ii) The physical and hydraulic properties of the drainage layer materials shall promote lateral drainage of leachate through a zone of relatively high permeability or transmissivity under the predicted loads imposed by overlying materials.

(B) Construction requirements.

- (i) The drainage layer materials shall be placed in accordance with the approved plans prepared in accordance with Rule .1604(b) of this Section and in a manner that prevents equipment from working directly on the geomembrane.
- (ii) The drainage layer materials shall be stable on the slopes specified on the engineering drawings.

(C) Certification requirements. The project engineer shall include in the construction quality assurance report a discussion of the quality assurance and quality control testing to ensure that the drainage layer material is placed according to the approved plans. The testing procedures and protocols for field installation shall be submitted in accordance with of Rule .1621 of this Section and approved by the Division. The results of all testing shall be included in the construction quality assurance report including documentation of any failed test results, descriptions of the procedures used to correct the improperly installed material, and statements of all retesting performed in accordance with the approved plans prepared in accordance with Rule .1604(b) of this Section.

(13) Filter layer criteria. All filter collection layers used in the leachate collection system shall be designed to prevent the migration of fine soil particles into a courser grained material, and permit water or gases to freely enter a drainage medium (pipe or drainage layer) without clogging.

(A) Materials required.

(i) Graded cohesionless soil filters. The granular soil material used as a filter shall have no more than five percent by weight passing the No. 200 sieve and no soil particles larger than three inches in any dimension.

(ii) Geosynthetic filters. Geosynthetic filter materials shall demonstrate adequate permeability and soil particle retention, and chemical and physical resistance which is not adversely affected by waste placement, any overlying material or leachate generated by the landfill.

(B) Construction requirements. All filter layers shall be installed in accordance with the engineering plan and specifications incorporated into the permit to construct prepared in accordance with Rule .1604(b) of this Section. Geosynthetic filter materials shall not be wrapped directly around leachate collection piping.

(C) Certification requirements. The project engineer shall include in the construction quality assurance report a discussion of the quality assurance and quality control testing to ensure that the filter layer material is placed according to the approved plans. The testing procedures and protocols for field installation shall be submitted in accordance with Rule .1621 of this Section and approved by the Division. The results of all testing shall be included in the construction quality assurance report including documentation of any failed test results, descriptions of the procedures used to correct the improperly installed material, and statements of all retesting performed in accordance with the approved plans prepared in accordance with Rule .1604(b) of this Section.

(14) Special engineering structures. Engineering structures incorporated in the design and necessary to comply with the requirements of this Section shall be specified in the engineering plan. Material, construction, and certification requirements necessary to ensure that the structure is constructed according to the design and acceptable engineering practices shall be included in the Division approved plan.

(15) Sedimentation and erosion control. Adequate structures and measures shall be designed and maintained to manage the run-off generated by the 24-hour, 25-year storm event, and conform to the requirements of the Sedimentation Pollution Control Law (15A NCAC 4).

(16) Construction quality assurance (CQA) report.

(A) A CQA report shall be submitted:

(i) After completing landfill construction in order to qualify the constructed MSWLF unit for a permit to operate;

(ii) After completing construction of the cap system in accordance with the requirements of Rule .1629; and

(iii) According to the reporting schedule developed in accordance with Rule .1621 of this Section.

(B) The CQA report shall include, at a minimum, the information prepared in accordance with the requirements of Rule .1621 of this Section containing results of all construction quality assurance and construction quality control testing required in this Rule including documentation of any failed test results, descriptions of procedures used to correct the improperly installed material and results of all retesting performed. The CQA report shall contain as-built drawings noting any deviation from the approved engineering plans and shall also contain a

comprehensive narrative including but not limited to daily reports from the project engineer and a series of color photographs of major project features.  
 (C) The CQA report shall bear the seal of the project engineer and a certification that construction was completed in accordance with:

- (i) The CQA plan;
- (ii) The conditions of the permit to construct;
- (iii) The requirements of this Rule; and
- (iv) Acceptable engineering practices.

(D) The Division shall review the CQA report within ~~30~~10 days of a complete submittal to ensure that the report meets the requirements of this Subparagraph.

Table 1

CHEMICAL	MCL(mg/l
Arsenic	0.05
Barium	1.0
Benzene	0.005
Cadmium	0.01
Carbon Tetrachloride	0.005
Chromium (hexavalent)	0.05
2,4-Dichlorophenoxy acetic acid	0.1
1,4-Dichlorobenzene	0.075
1,2-Dichloroethane	0.005
1,1-Dichloroethylene	0.007
Endrin	0.0002
Fluoride	4
Lindane	0.004
Lead	0.05
Mercury	0.002
Methoxychlor	0.1
Nitrate	10.0
Selenium	0.01
Silver	0.05
Toxaphene	0.005
1,1,1-Trichloromethane	0.2
Trichloroethylene	0.005
2,4,5-Trichlorophenoxy acetic acid	0.01
Vinyl Chloride	0.002

Commented [A1]: Update this table.

*History Note: Authority G.S. 130A-294;  
 Eff. October 9, 1993;  
 Temporary Amendment Eff. July 8, 1998;  
 Amendment Eff. April 1, 1999.*

### 15A NCAC 13B .1625 OPERATION PLAN FOR MSWLF FACILITIES

(a) The operator of a MSWLF unit shall maintain and operate the facility according to the operation plan prepared in accordance with this Rule.

~~(1) Existing MSWLF units. The operator of an existing MSWLF unit shall meet the following requirements:~~

~~(A) The operation plan shall be prepared as the information becomes available.~~

~~(B) The operation plan shall be completed and submitted on or before April 9, 1994.~~

~~(C) The operation plan shall describe the existing phase of landfill development through the final receipt of wastes established in accordance with Subparagraph (e)(10) of the Rule .1627.~~

~~(D) The operator of an existing MSWLF unit which will reach permitted capacity prior to October 9, 1996 as set forth in the effective permit shall:~~

~~(i) Complete the operation plan and submit five copies to the Division at least 60 days prior to reaching permitted capacity; and~~

~~(ii) Receive at least partial approval from the Division as set forth in Part (d)(2)(B) of Rule .1603 in order to continue operation of the existing MSWLF unit.~~

(2) New MSWLF units and lateral expansions. The operation plan shall be submitted in accordance with Rules .1617 and .1604(b)(2)(P) of this Section. Each phase of operation shall be defined by an area which will contain approximately ~~five years~~ of disposal capacity.

(b) Operation Plan. The owner or operator of a MSWLF unit shall prepare an operation plan for each phase of landfill development. The plan shall include drawings and a report clearly defining the information proposed for the Division approved plan.

(1) Operation drawings. Drawings shall be prepared for each phase of landfill development. The drawings shall be consistent with the engineering plan and prepared in a format which is useable for the landfill operator. The operation drawings shall illustrate the following:

(A) Existing conditions, including the known limits of existing disposal areas;

(B) Progression of construction cells for incremental or modular construction;

(C) Progression of operation, including initial waste placement, daily operations, transition contours, and final contours;

(D) Leachate and stormwater controls for active and inactive subcells;

(E) Special waste areas within the MSWLF unit;

(F) Buffer zones, noting restricted use; and

(G) Stockpile and borrow operations.

(2) Operation report. The report shall provide a narrative discussion of the operation drawings and contain a description of the facility operation that conforms to the requirements of Rule .1626 of this Section.

(3) The operation plan for an existing MSWLF unit shall include:

(A) The facility's programs set forth in Parts (1)(f), (2)(b), and (4)(b) of Rule .1626;

(B) A Sedimentation and Erosion Control plan which incorporates adequate measures to control surface water run-off and run-on generated from the 24-hour, 25-year storm event;

**Commented [A1]:** Add the following language:  
After permit is approved, the operations plan will become a part of the operating record. Modifications to the operations plan can be made by the permittee without permit modifications.

(C) Operation drawings that illustrate annual phases of development which are consistent with the minimum and maximum slope requirements set forth in Subparagraph (c)(3) of Rule .1627;

~~(D) The remaining permitted capacity approved by the Division prior to October 9, 1993, and calculated from October 9, 1993 using reasonable methods, data, and assumptions; and~~

~~(E) Documented closure of the landfill unit(s) which stopped receiving waste before October 9, 1991.~~

*History Note: Authority G.S. 130A-294;  
Eff. October 9, 1993.*

### **15A NCAC 13B .1626 OPERATIONAL REQUIREMENTS FOR MSWLF FACILITIES**

The owner or operator of any MSWLF unit must maintain and operate the facility in accordance with the requirements set forth in this Rule and the operation plan as described in Rule .1625 of this Section.

#### **(1) Waste Acceptance and Disposal Requirements.**

- (a) A MSWLF shall only accept those solid wastes which it is permitted to receive. The landfill owner or operator shall notify the Division within 24 hours of attempted disposal of any waste the landfill is not permitted to receive, including waste from outside the area the landfill is permitted to serve.
- (b) The following wastes are prohibited from disposal at a MSWLF unit:
  - (i) Hazardous waste as defined within 15A NCAC 13A, including hazardous waste from conditionally exempt small quantity generators.
  - (ii) Polychlorinated biphenyls (PCB) wastes as defined in 40 CFR 761.
  - (iii) Liquid wastes unless they are managed in accordance with Item (9) of this Rule.
- (c) Spoiled foods, animal carcasses, abattoir waste, hatchery waste, and other animal waste delivered to the disposal site shall be covered upon receipt.
- (d) Asbestos waste shall be managed in accordance with 40 CFR 61, which is hereby incorporated by reference including any subsequent amendments and additions. Copies of 40 CFR 61 are available for inspection at the Department of Environment, Health, and Natural Resources, Division of Solid Waste, 401 Oberlin Road, Raleigh, N.C. at no cost. The waste shall be covered upon receipt, with soil or waste, in a manner that will not cause airborne conditions and must be disposed of separate and apart from other solid wastes:
  - (i) At the bottom of the working face; or
  - (ii) In an area not contiguous with other disposal areas. Separate areas shall be designated, with signage, so that asbestos is not exposed by future land-disturbing activities.
- (e) Wastewater treatment sludges may only be accepted for disposal in accordance with the following conditions:
  - (i) Utilized as a soil conditioner and incorporated into or applied onto the vegetative growth layer but, in no case greater than six inches in depth; or
  - (ii) Co-disposed if the facility meets all design requirements contained within Rule .1624, and approved within the permit, or has been previously approved as a permit condition.
- (f) Owners or operators of all MSWLF units must implement a program at the facility for detecting and preventing the disposal of hazardous and liquid wastes. This program must include, in accordance with 40 CFR 258.20:
  - (i) Random inspections of incoming loads or other comparable procedures;
  - (ii) Records of any inspections;
  - (iii) Training of facility personnel to recognize hazardous and liquid wastes; and
  - (iv) Development of a contingency plan to properly manage any identified hazardous and liquid wastes. The plan must address identification, removal, storage and final disposition of the waste.

- (g) Waste placement at existing MSWLF units shall meet the following criteria:
  - (i) Waste placement at existing MSWLF units not designed and constructed with a base liner system approved by the Division shall be within the areal limits of the actual waste boundary established prior to October 9, 1993 and in a manner consistent with the effective permit.
  - (ii) Waste placement at existing MSWLF units designed and constructed with a base liner system permitted by the Division prior to October 9, 1993 and approved for operation by the Division shall be within the areal limits of the base liner system and in manner consistent with the effective permit.
- (2) Cover material requirements.
  - (a) Except as provided in Sub-Item (b) of this Item, the owners or operators of all MSWLF units must cover disposed solid waste with six inches of earthen material at the end of each operating day, or at more frequent intervals if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging.
  - (b) Alternative materials of an alternative thickness (other than at least six inches of earthen material) may be approved by the Division if the owner or operator demonstrates that the alternative material and thickness control disease vectors, fires, odors, blowing litter, and scavenging without presenting a threat to human health and the environment, in accordance with 40 CFR Part 258.21. A MSWLF owner or operator may apply for a generic approval of an alternative cover material, which would extend to all MSWLF units.
  - (c) Areas which will not have additional wastes placed on them for 12 months or more, but where final termination of disposal operations has not occurred, shall be covered with a minimum of one foot of intermediate cover.
- (3) Disease vector control.
  - (a) Owners or operators of all MSWLF units must prevent or control on-site populations of disease vectors using techniques appropriate for the protection of human health and the environment.
  - (b) For purposes of this Item, "disease vectors" means any rodents, flies, mosquitoes, or other animals, including insects, capable of transmitting disease to humans.
- (4) Explosive gases control.
  - (a) Owners or operators of all MSWLF units must ensure that:
    - (i) The concentration of methane gas generated by the facility does not exceed 25 percent of the lower explosive limit for methane in facility structures (excluding gas control or recovery system components); and
    - (ii) The concentration of methane gas does not exceed the lower explosive limit for methane at the facility property boundary.
  - (b) Owners or operators of all MSWLF units must implement a routine methane monitoring program to ensure that the standards of Sub-item (4)(a) of this Rule are met.

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

  - (i) Soil conditions;
  - (ii) The hydrogeologic conditions surrounding the facility;

- (iii) The hydraulic conditions surrounding the facility; and
- (iv) The location of facility structures and property boundaries.

The minimum frequency of monitoring shall be quarterly.

(c) If methane gas levels exceeding the limits specified in Sub-item (4)(a) of this Rule are detected, the owner or operator must:

- (i) Immediately take all necessary steps to ensure protection of human health and notify the Division, as provided in 40 CFR Part 258.23;
- (ii) 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
- (iii) 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 Division that the plan has been implemented. The plan shall describe the nature and extent of the problem and the proposed remedy. Based on the need for an extension demonstrated by the operator, the Division may establish alternative schedules for demonstrating compliance with Sub-item (4)(c)(ii) and (iii) of this Rule.

(d) For purposes of this Item, "lower explosive limit" means the lowest percent by volume of a mixture of explosive gases in air that will propagate a flame at 25 C and atmospheric pressure.

(5) Air Criteria.

(a) Owners or operators of all MSWLFs must ensure that the units do not violate any applicable requirements developed under a State Implementation Plan (SIP) approved or promulgated by the U.S. EPA Administrator pursuant to Section 110 of the Clean Air Act, as amended.

(b) Open burning of solid waste, except for the infrequent burning of land clearing debris generated on site or debris from emergency clean-up operations, as provided for in 40 CFR Part 258.24, is prohibited at all MSWLF units. Any such infrequent burning must be approved by the Division.

(c) Equipment shall be provided to control accidental fires or arrangements shall be made with the local fire protection agency to provide fire-fighting services as soon as needed.

(d) Fires that occur at a MSWLF require verbal notice to the Division within 24 hours and written notification shall be submitted within 15 days.

(6) Access and safety requirements.

(a) The MSWLF shall be secured by means of gates, chains, berms, fences and other security measures approved by the Division to prevent unauthorized entry.

(b) An attendant shall be on duty at the site at all times while it is open for public use to ensure compliance with operational requirements.

(c) The access road to the site shall be of all-weather construction and maintained in good condition.

(d) Dust control measures shall be implemented.

(e) Signs providing information on dumping procedures, the hours during which the site is open for public use, the permit number and the information specified in the permit conditions shall be posted at the site entrance.

(f) Signs shall be posted stating that no hazardous or liquid waste can be received.



(g) Traffic signs or markers shall be provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient operating conditions.

(h) The removal of solid waste from a MSWLF is prohibited unless the owner or operator approves and the removal is not performed on the working face.

(i) Barrels and drums shall not be disposed of unless they are empty and perforated sufficiently to ensure that no liquid or hazardous waste is contained therein, except fiber drums containing asbestos.

**(7) Erosion and sedimentation control requirements.**

(a) Adequate sediment control measures (structures or devices), shall be utilized to ~~prevent~~ minimize silt from leaving the MSWLF facility.

(b) Adequate sediment control measures (structures or devices), shall be utilized to ~~prevent~~ minimize on-site erosion.

(c) Provisions for a vegetative ground cover sufficient to restrain erosion must be accomplished within 30 working days or 120 calendar days upon completion of any phase of MSWLF development.

**(8) Drainage control and water protection requirements.**

(a) Surface water shall be diverted from the operational area.

(b) Surface water shall not be impounded over or in waste.

(c) Solid waste shall not be disposed of in water.

(d) Leachate shall be contained within a lined disposal cell or leachate collection and storage system. All leachate shall be treated, as required by the receiving facility, prior to discharge. An NPDES permit may be required prior to the discharge of leachate to surface waters, as provided by 40 CFR Parts 258.26 and 258.27.

(e) MSWLF units shall not:

(i) Cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act, including the National Pollutant Discharge Elimination System (NPDES) requirements, pursuant to Section 402.

(ii) Cause the discharge of a nonpoint source of pollution to waters of the United States, including wetlands, that violates any requirement of an area-wide or State-wide water quality management plan that has been approved under Section 208 or 319 of the Clean Water Act, as amended.

**(9) Liquids restrictions.**

(a) Bulk or non-containerized liquid waste may not be placed in MSWLF units unless:

(i) The waste is household waste other than septic waste and waste oil; or  
(ii) The waste is leachate or gas condensate derived from the MSWLF unit, whether it is a new or existing MSWLF unit or lateral expansion of the unit, is designed with a composite liner and leachate collection system as described within Rule .1624 of this Section.

(b) Containers holding liquid wastes may not be placed in the MSWLF unit unless:

(i) The container is a small container similar in size to that normally found in household waste;

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- (ii) The container is designed to hold liquids for use other than storage; or
  - (iii) The waste is household waste.
- (c) For the purpose of this Paragraph:
  - (i) Liquid waste means any waste material that is determined to contain "free liquids" as defined by Method 9095 (Paint Filter Liquids Test), S.W. 846.
  - (ii) Gas Condensate means the liquid generated as a result of gas recovery processes at the MSWLF unit.
- (10) Recordkeeping requirements.
  - (a) The owner or operator of a MSWLF unit must record and retain at the facility in an operating record the following information as it becomes available:
    - (i) Inspection records, waste determination records, and training procedures required in Item (1) of this Rule;
    - (ii) Amounts by weight of solid waste received at the facility including source of generation;
    - (iii) Gas monitoring results and any remediation plans required by Item (4) of this Rule;
    - (iv) Any demonstration, certification, finding, monitoring, testing, or analytical data required by Rules .1630 thru .1637 of this Section;
    - (v) Any monitoring, testing, or analytical data as required by Rule .1627 of this Section; and
    - (vi) Any cost estimates and financial assurance documentation required by Rule .1628 of this Section.
  - (b) All information contained in the operating record must be furnished upon request to the Division or be made available at all reasonable times for inspection by the Division.
  - (c) The owner or operator must maintain a copy of the operation plan required by Rule .1625 of this Section at the facility.
- (11) Spreading and Compacting requirements.
  - (a) MSWLF units shall restrict solid waste into the smallest area feasible.
  - (b) Solid waste shall be compacted as densely as practical into cells.
  - (c) Methods such as fencing and diking shall be provided within the area to confine solid waste subject to be blown by the wind. At the conclusion of each day of operation, all windblown material resulting from the operation shall be collected and returned to the area by the owner or operator.
- (12) Leachate management plan. The owner or operator of a MSWLF unit designed with a leachate collection system must establish and maintain a leachate management plan which includes the following:
  - (a) Periodic maintenance of the leachate collection system;
  - (b) Maintaining records for the amounts of leachate generated;
  - (c) Semi-annual leachate quality sampling;
  - (d) Approval for final leachate disposal; and
  - (e) A contingency plan for extreme operational conditions.

*History Note: Authority G.S. 130A-294;  
Eff. October 9, 1993;  
Amended Eff. May 1, 2011.*

## 15A NCAC 13B .1630 APPLICABILITY OF GROUND-WATER MONITORING REQUIREMENTS

(a) The ground-water monitoring, assessment, and corrective action requirements under Rules .1630 through .1637 of this Section apply to all MSWLF units.

(b) Owners or operators of MSWLF units shall comply with the ground-water monitoring, assessment, and corrective action requirements under Rules .1630 through .1637 of this Section according to the following schedule:

(1) New MSWLF units shall be in compliance with the requirements before waste can be placed in the unit.

(2) Lateral expansions to existing MSWLF units shall be in compliance with the requirements before waste can be placed in the expansion area.

~~(3) For existing MSWLF units, compliance with the requirements shall be demonstrated to the Division on or before October 9, 1994.~~

(c) Once established at a MSWLF unit, ground-water monitoring shall be conducted throughout the active life and post-closure care period of that MSWLF unit.

(d) Ground-water monitoring plans, assessment plans, and corrective action plans shall be prepared under the responsible charge of and bear the seal of a Licensed Geologist or Professional Engineer (in accordance with G.S. 89E and 89C, respectively).

(e) The North Carolina Groundwater Classifications and Standards (15A NCAC 2L) are incorporated by reference including subsequent amendments and editions. Copies of this material may be inspected or obtained at the ~~Department of Environment, Health, and Natural Resources, Division of Solid Waste Management, 401 Oberlin Road~~, Raleigh, North Carolina at no cost.

*History Note: Authority G.S. 130A-294;  
Eff. October 9, 1993.*

### 15A NCAC 13B .1633 DETECTION MONITORING PROGRAM

(a) Detection monitoring is required at MSWLF units at all ground-water monitoring wells that are part of the detection monitoring system as established in the approved monitoring plan. At a minimum, as provided for in 40 CFR 258, the detection monitoring program shall include monitoring for the constituents listed in Appendix I of 40 CFR Part 258. "Appendix I Constituents for Detection Monitoring" (Appendix I), is incorporated by reference including subsequent amendments and editions. Copies of this material may be inspected or obtained at the Department of Environment and Natural Resources, Division of Waste Management, Raleigh, North Carolina at no cost.

(b) The monitoring frequency for all Appendix I detection monitoring constituents shall be at least semiannual during the life of the facility (including closure) and the post-closure period. A minimum of four independent samples from each well (background and downgradient) shall be collected and analyzed for the Appendix I constituents during the first semiannual sampling event. At least one sample from each well (background and downgradient) shall be collected and analyzed during subsequent semiannual sampling events.

(c) If the owner or operator determines that there is an exceedance of the ground-water protection standards, as defined in Paragraph (g) or (h) of Rule.1634 for one or more of the constituents listed in Appendix I of this Rule at any monitoring well at the relevant point of compliance, the owner or operator:

- (1) Shall, within 14 days of this finding, report to the Division and place a notice in the operating record indicating which constituents have exceeded ground-water protection standards;
- (2) Shall establish an assessment monitoring program meeting the requirements of this Section within 90 days except as provided for in Subparagraph (3) of this Paragraph; and
- (3) May demonstrate that a source other than a MSWLF unit caused the exceedance, or the exceedance resulted from an error in sampling, analysis, statistical evaluation, or natural variation in ground-water quality. A report documenting this demonstration shall be approved by the Division. If required by G.S. 89C or G.S. 89E, a professional engineer or licensed geologist shall prepare these documents. [Note: The North Carolina Board of Examiners for Engineers and Surveyors and the Board of Licensing of Geologist has determined, via letters dated July 16, 2010 and November 30, 2010 respectively, that preparation of documents pursuant to this Paragraph constitutes practicing engineering or geology under G.S. 89C and G.S. 89E.] A copy of this report shall also be placed in the operating record. If a successful demonstration is made, documented, and approved by the Division, the owner or operator may continue detection monitoring. If after 90 days, a successful demonstration is not made, the owner or operator shall initiate an assessment monitoring program as required by this Section.

*History Note: Authority G.S. 130A-294;  
Eff. October 9, 1993;  
Amended Eff. April 1, 2011.*

**Commented [A1]:** Please explain why 4 samples must be taken from the background wells during the first year with one being taken prior to placing waste?

**Commented [A2]:** Is this consistent with Federal Rules?

### 15A NCAC 13B .1634 ASSESSMENT MONITORING PROGRAM

(a) Assessment monitoring is required whenever one or more of the constituents listed in Appendix I is detected in exceedance of the ground-water protection standards, as defined in Paragraph (g) or (h) of this Rule.

(b) Within 90 days of triggering an assessment monitoring program, and annually thereafter, the owner or operator shall sample and analyze the ground water for all constituents identified in Appendix II of 40 CFR Part 258. 40 CFR Part 258 – "Appendix II List of Hazardous Inorganic and Organic Constituents" (Appendix II), is incorporated by reference including subsequent amendments and editions. Copies of this material may be inspected or obtained at the Department of Environment and Natural Resources, Division of Waste Management, Raleigh, North Carolina at no cost. A minimum of one sample from each downgradient well shall be collected and analyzed during each sampling event. For any constituent detected in the downgradient wells as the result of the Appendix II analysis, a minimum of four independent samples from each well (background and downgradient) shall be collected and analyzed to establish background for the new constituents. The Division may specify, as provided for in 40 CFR 258, an appropriate subset of wells to be sampled and analyzed for Appendix II constituents during assessment monitoring. The Division may delete, as provided for in 40 CFR 258, any of the Appendix II monitoring parameters for a MSWLF unit if it can be shown that the removed constituents are not reasonably expected to be in or derived from the waste contained in the unit.

(c) The Division may specify an appropriate alternate frequency for repeated sampling and analysis for Appendix II constituents required by Paragraph (b) of this Rule, during the active life and post-closure care of the unit considering the following factors:

- (1) Lithology of the aquifer and unsaturated zone;
- (2) Hydraulic conductivity of the aquifer and unsaturated zone;
- (3) Ground-water flow rates;
- (4) Minimum distance of travel;
- (5) Resource value of the aquifer; and
- (6) Nature, fate, and transport of any detected constituents.

(d) After obtaining the results from the initial or subsequent sampling events required in Paragraph (b) of this Rule, the owner or operator shall:

- (1) Within 14 days, submit a report to the Division and place a notice in the operating record identifying the Appendix II constituents that have been detected;
- (2) Within 90 days, and on at least a semiannual basis thereafter, resample all wells of the approved detection monitoring system for the unit for all constituents listed in Appendix I and for those constituents in Appendix II that have been detected in response to Paragraph (b) of this Rule. A report from each sampling event shall be submitted to the Division and placed in the facility operating record. At least one sample from each well (background and downgradient) shall be collected and analyzed during each of these sampling events;
- (3) Establish and report to the Division background concentrations for any constituents detected pursuant to Paragraph (b) or (d)(2) of this Rule; and
- (4) Obtain a determination from the Division to establish ground-water protection standards for all constituents detected pursuant to Paragraph (b) or (d) of this Rule. The ground-water protection standards shall be established in accordance with Paragraph (g) or (h) of this Rule.

**Commented [A1]:** Make this section consistent with federal requirements. Delete all requirements more stringent than federal.

(e) If the concentrations of all Appendix II constituents are shown to be at or below the approved ground-water protection standards, for two consecutive sampling events, the owner or operator shall report this information to the Division, and the Division shall give approval to the owner or operator to return to detection monitoring.

(f) If one or more Appendix II constituents are detected above the approved ground-water protection standards in any sampling event, the owner or operator, shall within 14 days of this finding, submit a report to the Division, place a notice in the operating record, and notify local government officials. The owner or operator:

(1) shall:

(A) Characterize the nature and extent of the release by installing additional monitoring wells, as necessary;

(B) Install at least one additional monitoring well at the facility boundary in the direction of contaminant migration and sample this well in accordance with Paragraph (d)(2) of this Rule;

(C) Notify all persons who own land or reside on land that directly overlies any part of the plume of contamination if contaminants have migrated off-site; and

(D) Within 90 days, initiate an assessment of corrective measures as required under Rule .1635 of this Section; or

(2) may demonstrate that a source other than a MSWLF unit caused the exceedance of the ground-water protection standards, or the exceedance resulted from error in sampling, analysis, or natural variation in ground-water quality. A report documenting this demonstration shall be approved by the Division. If required by G.S. 89C or G.S. 89E, a professional engineer or licensed geologist shall prepare these documents. [Note: The North Carolina Board of Examiners for Engineers and Surveyors and the Board of Licensing of Geologist has determined, via letters dated July 16, 2010 and November 30, 2010 respectively, that preparation of documents pursuant to this Paragraph constitutes practicing engineering or geology under G.S. 89C and G.S. 89E.] A copy of the approved report shall also be placed in the operating record. If a successful demonstration is made, the owner or operator may discontinue assessment monitoring, and may return to detection monitoring when approval is given by the Division. Until a successful demonstration is made, the owner or operator shall comply with Paragraph (f)(1) of this Rule including initiating an assessment of corrective measures.

(g) The owner or operator shall obtain a determination from the Division on establishing a ground-water protection standard for each Appendix II constituent detected in the ground-water. The ground-water protection standard shall be the most protective of Subparagraphs (1) through (4) or Subparagraph (5);

(1) For constituents for which a maximum contamination level (MCL) has been promulgated under the Section 1412 of the Safe Drinking Water Act codified under 40 CFR Part 141, the MCL for that constituent;

(2) For constituents for which a water quality standard has been established under the North Carolina Rules Governing Public Water Systems, 15A NCAC 18C, the water quality standard for that constituent;

(3) For constituents for which a water quality standard has been established under the North Carolina Groundwater Classifications And Standards, 15A NCAC 02L .0202, the water quality standard for that constituent;

(4) For constituents for which MCLs or water quality standards have not been promulgated, the background concentration for the constituent established from wells in accordance with Rule .1631(a)(1) and Rule .1632 of this Section; or

(5) The owner or operator may request the Division approve a background level that is higher than the standard established in Subparagraphs (1) through (3) of this Paragraph or health based levels identified under Paragraph (h) of this Rule. The background level shall be established in accordance with Rule .1631(a)(1) and Rule .1632. The approved background level shall be the established ground-water protection standard.

(h) The Division may establish an alternative ground-water protection standard for constituents for which neither an MCL or water quality standard has not been established. These ground-water protection standards shall be health based levels that satisfy the following criteria:

- (1) The level is derived in a manner consistent with E.P.A. guidelines for assessing the health risks of environmental pollutants;
- (2) The level is based on scientifically valid studies conducted in accordance with the Toxic Substances Control Act Good Laboratory Practice Standards (40 CFR Part 792) or equivalent standards;
- (3) For carcinogens, the level represents a concentration associated with an excess lifetime cancer risk level (due to continuous lifetime exposure) of  $1 \times 10^{-6}$  and;
- (4) For systemic toxicants, the level represents a concentration to which the human population (including sensitive subgroups) could be exposed to on a daily basis that is likely to be without appreciable risk of deleterious effects during a lifetime. For the purposes of this Rule, systemic toxicants include toxic chemicals that cause effects other than cancer or mutation.

(i) In establishing ground-water protection standards under Paragraph (h) of this Rule the Division shall consider the following:

- (1) Multiple contaminants in the ground water;
- (2) Exposure threats to sensitive environmental receptors; and
- (3) Other site-specific exposure or potential exposure to ground-water.

*History Note: Authority G.S. 130A-294;*

*Eff. October 9, 1993;*

*Amended Eff. April 1, 2011.*

**15A NCAC 13B .1635 ASSESSMENT OF CORRECTIVE MEASURES**

- (a) Within 90 days of finding that any of the constituents listed in Appendix II exceeded the ground-water protection standards, the owner or operator shall initiate assessment of corrective action measures. Such an assessment must be completed within 120 days.
- (b) The owner or operator shall continue to monitor in accordance with the approved assessment monitoring program.
- (c) The assessment of corrective measures shall include an analysis of the effectiveness of potential corrective measures in meeting all of the requirements and objectives of the remedy as described under Rule .1636 of this Section, addressing at least the following, as provided for in 40 CFR 258:
- (1) The performance, reliability, ease of implementation, and potential impacts of potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination;
  - (2) The time required to begin and complete the remedy;
  - (3) The costs of remedy implementation; and
  - (4) The institutional requirements such as State and Local permit requirements or other environmental or public health requirements that may affect implementation of the remedy(s).
- (d) The owner or operator shall discuss the results of the corrective measures assessment, prior to the selection of remedy, in a public meeting with interested and affected parties. The owner or operator shall provide a public notice of the meeting at least 30 days prior to the meeting. The notice shall include the time, place, date, and purpose of the meeting required by this Paragraph. A copy of the public notice shall be forwarded to the Division at least five days prior to publication. The owner or operator shall mail a copy of the public notice to those persons requesting notification. Public notice shall include:
- (1) a legal advertisement placed in a newspaper or newspapers serving the county; and
  - (2) provision of a news release to at least one newspaper, one radio station, and one television station serving the county.

*History Note: Authority G.S. 130A-294;  
Eff. October 9, 1993;  
Amended Eff. May 1, 2011.*

**Commented [A1]:** NC Regulatory Reform Act of 2015 amends part 8, Article 9 of NCGS 130A to allow for risk-based ground water protection standards. This amendment needs to be incorporated into the Solid Waste Rules which currently does not allow risk-based standards.



**15A NCAC 13B .1636 SELECTION OF REMEDY**

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(a) Based on the results of the corrective measures assessment, the owner or operator shall select a remedy that, at a minimum, meets the standards listed in Rule .1636(b). Within 14 days of selecting a remedy, the permittee shall submit an application to modify the permit describing the selected remedy to the Division for evaluation and approval. The application shall be subject to the processing requirements set forth in Rule .1604 (c) of this Section. The application shall include the demonstrations necessary to comply with the financial assurance requirements set forth in Paragraph (d) of Rule .1628.

(b) Remedies shall:

- (1) Be protective of human health and the environment;
- (2) Attain the approved ground-water protection standards;
- (3) Control the source(s) of releases so as to reduce or eliminate, to the maximum extent practicable, further releases of Appendix II constituents into the environment that may pose a threat to human health or the environment; and
- (4) Comply with standards for management of wastes as specified in Rule .1637(d); and

(c) In selecting a remedy that meets the standards of Rule .1636(b), the owner or operator shall consider the following evaluation factors:

(1) The long-term and short-term effectiveness and protectiveness of the potential remedy(s), along with the degree of certainty that the remedy will prove successful based on consideration of the following:

- (A) Magnitude of reduction of existing risks;
- (B) Magnitude of residual risks in terms of likelihood of further releases due to wastes remaining following implementation of a remedy;
- (C) The type and degree of long-term management required, including monitoring, operation, and maintenance;
- (D) Short-term risks that might be posed to the community, workers, or the environment during implementation of such a remedy, including potential threats to human health and the environment associated with excavation, transportation, and redisposal or containment;
- (E) Time until full protection is achieved;
- (F) Potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, redisposal, or containment;
- (G) Long-term reliability of the engineering and institutional controls; and
- (H) Potential need for replacement of the remedy.

(2) The effectiveness of the remedy in controlling the source to reduce further releases based on consideration of the following factors:

- (A) The extent to which containment practices will reduce further releases; and
- (B) The extent to which treatment technologies may be used.

(3) The ease or difficulty of implementing a potential remedy based on consideration of the following types of factors:

- (A) Degree of difficulty associated with constructing the technology;
- (B) Expected operational reliability of the technologies;
- (C) Need to coordinate with and obtain necessary approvals and permits from other agencies;
- (D) Availability of necessary equipment and specialists; and

(E) Available capacity and location of needed treatment, storage, and disposal services.

(4) Practicable capability of the owner or operator, including a consideration of the technical and economic capability.

(5) The degree to which community concerns are addressed by a potential remedy.

(d) The owner or operator shall specify as part of the selected remedy a schedule for initiating and completing remedial activities. This schedule shall be approved by the Division. Such a schedule shall require the initiation of remedial activities within a reasonable period of time taking into consideration the factors set forth in this Rule. The owner or operator shall consider the following factors in determining the schedule of remedial activities:

(1) Extent and nature of contamination;

(2) Practical capabilities of remedial technologies in achieving compliance with the approved ground-water protection standards and other objectives of the remedy;

(3) Availability of treatment or disposal capacity for wastes managed during implementation of the remedy;

(4) Desirability of utilizing technologies that are not currently available, but which may offer significant advantages over already available technologies in terms of effectiveness, reliability, safety, or ability to achieve remedial objectives;

(5) Potential risks to human health and the environment from exposure to contamination prior to completion of the remedy;

(6) Resource value of the aquifer including:

(A) Current and future uses;

(B) Proximity and withdrawal rate of users;

(C) Ground water quantity and quality;

(D) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to contaminants;

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

(F) Ground water removal and treatment costs; and

(G) The costs and availability of alternative water supplies.

(7) Practical capability of the owner or operator; and

(8) Other relevant factors.

(e) The Division may determine that active remediation of a release of an Appendix II constituent from a MSWLF unit is not necessary if the owner or operator demonstrates to the satisfaction of the Division that:

(1) The ground water is additionally contaminated by substances that have originated from a source other than a MSWLF unit and those substances are present in concentrations such that active cleanup of the release from the MSWLF unit would provide no significant reduction in risk to actual or potential receptors; or

(2) The constituent or constituents are present in ground water that:

(A) Is not currently or reasonably expected to be a source of drinking water; and

(B) Is not hydraulically connected with water to which the hazardous constituents are migrating or are likely to migrate in concentrations that would exceed the approved ground-water protection standards; or

(3) Remediation of the releases is technically impracticable; or

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

(f) A determination by the Division pursuant to Rule. 1636(e) shall not affect the authority of the State to require the owner or operator to undertake source control measures or other measures that may be necessary to eliminate or minimize further releases to the ground water, to prevent exposure to the ground water, or to remediate ground water to concentrations that are technically practicable and significantly reduce threats to human health or the environment.

*History Note: Authority G.S. 130A-294;  
Eff. October 9, 1993.*

**15A NCAC 13B .1637 IMPLEMENTATION OF THE CORRECTIVE ACTION PROGRAM**

(a) Based on the approved schedule for initiation and completion of remedial activities, the owner or operator shall:

- (1) Establish and implement a corrective action ground-water monitoring program that:
  - (A) At a minimum, as provided for in 40 CFR 258, meets the requirements of an assessment monitoring program under Rule .1634 of this Section;
  - (B) Indicates the effectiveness of the corrective action remedy; and
  - (C) Demonstrates compliance with ground-water protection standards pursuant to Paragraph (e) of this Rule.

(2) Implement the approved corrective action remedy; and

(3) Take any interim measures necessary to ensure the protection of human health and the environment. Interim measures shall, to the greatest extent practicable, be consistent with the objectives of and contribute to the performance of any remedy that may be required.

The following factors shall be considered by an owner or operator in determining whether interim measures are necessary:

- (A) Time required to develop and implement a final remedy;
- (B) Actual or potential exposure of nearby populations or environmental receptors to hazardous constituents;
- (C) Actual or potential contamination of drinking water supplies or sensitive ecosystems;
- (D) Further degradation of the ground water that may occur if remedial action is not initiated expeditiously;
- (E) Weather conditions that may cause hazardous constituents to migrate or be released;
- (F) Risks of fire or explosion, or potential for exposure to hazardous constituents as a result of an accident or failure of a container or handling system; and
- (G) Other situations that may pose threats to human health or the environment.

(b) The owner or operator or the Division may determine, based on information developed after implementation of the remedy has begun or other information, that compliance with requirements of Rule .1636(b) of this Section are not being achieved through the remedy selected. In such cases, the owner or operator shall implement other methods or techniques, as approved by the Division, that could practicably achieve compliance with the requirements, unless the owner or operator makes the determination under Paragraph (c) of this Rule.

(c) If the owner or operator or the Division determines that compliance with requirements under Rule .1636(b) of this Section cannot be practically achieved with any currently available methods, the owner or operator shall:

- (1) Submit a written report that documents that compliance with the requirements under Rule .1636(b) of this Section cannot be practically achieved with any currently available methods and gain approval from the Division. If required by G.S. 89C or G.S. 89E, a professional engineer or licensed geologist shall prepare these documents. [Note: The North Carolina Board of Examiners for Engineers and Surveyors and the Board of Licensing of Geologist has determined, via letters dated July 16, 2010 and November 30, 2010, that preparation of documents pursuant to this Paragraph constitutes practicing engineering or geology under G.S. 89C and G.S. 89E.];

Commented [A1]: Make consistent with federal rules.

(2) Implement alternate measures to control exposure of humans or the environment to residual contamination, as necessary to protect human health and the environment; and  
(3) Implement alternate measures for control of the sources of contamination, or for removal or decontamination of equipment, units, devices, or structures that are:

(A) Technically practicable;

(B) Consistent with the overall objective of the remedy; and

(4) Submit a report justifying the alternative measures to the Division for approval prior to implementing the alternative measures. Upon approval by the Division, this report shall be placed in the operating record.

(d) All solid wastes that are managed pursuant to a remedy required under Rule .1636 of this Section, or an interim measure required under Paragraph (a) of this Rule, shall be managed in a manner:

(1) That is protective of human health and the environment; and

(2) That complies with applicable RCRA requirements.

(e) Remedies selected pursuant to Rule .1636 of this Section are considered complete when:

(1) The owner or operator complies with the approved ground-water protection standards at all points within the plume of contamination that lie beyond the relevant point of compliance;

(2) Compliance with the approved ground-water protection standards has been achieved by demonstrating that concentrations of Appendix II constituents have not exceeded these standards for a period of three consecutive years; and

(3) All actions required to complete the remedy have been satisfied.

(f) Upon completion of the remedy, the owner or operator shall submit a report to the Division documenting that the remedy has been completed in compliance with Paragraph (e) of this Rule. This report shall be signed by the owner or operator and by the preparer of the report. If required by G.S. 89C or G.S. 89E, a professional engineer or licensed geologist shall prepare these documents. [Note: The North Carolina Board of Examiners for Engineers and Surveyors and the Board of Licensing of Geologist has determined, via letters dated July 16, 2010 and November 30, 2010, that preparation of documents pursuant to this Paragraph constitutes practicing engineering or geology under G.S. 89C and G.S. 89E.] Upon approval by the Division, this report shall be placed in the operating record.

(g) When, upon completion of the certification, the Division determines that the corrective action remedy has been completed in accordance with Paragraph (e) of this Rule, the owner or operator shall be released from the requirements for financial assurance for corrective action under Rule .1628(d) of this Section.

*History Note: Authority G.S. 130A-294;*

*Eff. October 9, 1993;*

*Amended Eff. April 1, 2011.*