

1 15A NCAC 13B .1603 is proposed for amendment as follows:

3 **15A NCAC 13B .1603 GENERAL APPLICATION REQUIREMENTS AND PROCESSING**

4 (a) An owner or operator of a MSWLF unit or facility shall submit an application document as detailed in Rule .1617
5 of this Section in accordance with the following criteria and scheduling requirements:

6 (1) New permit.

7 (A) ~~_____ An applicant for a new permit as defined by G.S. 130A-294(a3)(1)a., c., d., and e. 130A-~~
8 ~~294(a3)(1) shall submit a site study and subsequently an application for a permit to~~
9 ~~construct as set forth in Rule .1617(a) of this Section.~~

10 (B) An applicant for a new permit as defined by G.S. 130A-294(a3)(1)b. shall submit an
11 application for permit as set forth in Rule .1617(b) of this Section.

12 (C) The Division shall review all permit applications in accordance with Rule .0203 of this
13 Subchapter.

14 (D) An application for a new permit is subject to the application fees set forth in G.S. 130A-
15 295.8(d2).

16 (2) Amendment to the permit. The owner or operator shall submit an application to amend the permit
17 to construct in accordance with Rule .1617(c) of this Section for the following circumstances:

18 (A) A subsequent stage of landfill development. A permit to construct issued in accordance
19 with Paragraph (c) of this Rule approves the life-of-site development of the MSWLF unit
20 indicated in the facility plan plus a set of plans, defined in Rule .1604(b)(1) of this Section
21 as the Division approved plans submitted by the applicant for either the entire MSWLF
22 unit or a portion of the MSWLF unit. For any subsequent stage of landfill development that
23 the applicant has not included in the plans required by Rule .1604(b)(1) of this Section for
24 any prior stage of landfill development, the owner or operator shall submit the amended
25 permit application no less than 180 days prior to the date scheduled for commencing
26 construction.

27 (B) A change in ownership or corporate structure of a permitted MSWLF facility in accordance
28 with G.S. 130A-294(a3)(2)b. The owner or operator shall notify the Division in writing
29 within 30 days of a change in ownership or corporate structure in accordance with G.S.
30 130A-295.2(g).

31 (3) Modifications to the permit. An owner or operator proposing changes to the plans approved in the
32 permit shall request prior approval from the Division in accordance with Rule .1617(d) of this
33 Section.

34 (4) Permit for Closure and Post-Closure Care. ~~The owner or operator shall submit an application for a~~
35 ~~closure and post-closure care permit to the Division when the facility reaches its final permitted~~
36 ~~elevations and prior to initiating closure activities for the final permitted MSWLF unit at the facility~~
37 ~~in accordance with Rule .1617(e) of this Section. Within 180 days following receipt of the notice~~

submitted to the Division in accordance with Rule .1627(c)(8) of this Section, the Division shall issue a permit for closure and post-closure care that incorporates the plans identified by the owner or operator in the notice. Owners or operators that closed all MSWLF units at the facility prior to the readopted effective date of this Rule shall not be required to submit the notice described in Rule .1627(c)(8) of this Section. If a closure and post-closure care permit has not already been issued, the a permit application for closure and post closure. The Division shall issue a permit for closure and post-closure care for these facilities based on that incorporates the plans that were incorporated into the most recent permit to operate for the facility. application submittal, if a closure and post closure permit has not already been issued.

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

(1) The 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;
- (B) contain a statement defining the purpose of the submittal signed and dated by the applicant;
- (C) contain a table of contents or index outlining the body of the application and the appendices;
- (D) be paginated consecutively; and
- (E) identify any revised text by noting the date of revision on the page.

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

- (A) 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; and
- (B) maps and drawings shall be prepared at a scale that illustrates the subject requirements, and that is legible if printed at a size of 22 inches by 34 inches.

(3) Number of copies. An applicant shall submit one copy of the application to the Division in an electronic format that is accessible and viewable by the Division. The Division may request that the applicant submit up to three paper copies of the application in three-ring binders.

(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 as set forth in Subparagraph (4) of this Paragraph.
- (B) Applicability. Applications for a new permit as defined in G.S. 130A-294(a3)(1), or for 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) of this Rule are not subject to the requirements of this Paragraph.

(2) Draft Permits.

(A) The Division shall review all permit applications for compliance with the rules of this Section and Rule .0203 of this Subchapter. Once an application is complete, the Division shall either issue a notice of intent to deny the permit to the applicant or prepare a draft permit.

(B) If the Division issues a notice of intent to deny the permit to the applicant, the notice shall include the reasons for permit denial in accordance with Rule .0203(e) of this Subchapter and G.S. 130A-294(a)(4)c.

(C) If the Division prepares a draft permit, the draft permit shall contain all applicable terms and conditions for the permit.

(D) 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 Sheets. The Division shall prepare a fact sheet for every draft permit, and shall send this fact sheet to the applicant and post the fact sheet on the Division website. The fact sheet shall include:

(A) a description of the type of facility or activity that is the subject of the draft permit;

(B) a description of the area to be served, the volume and characteristics of the waste stream, and a projection of the useful life of the landfill;

(C) a summary of the basis for the draft permit conditions, including references to statutory or regulatory provisions and supporting references to the permit application;

(D) the beginning and ending dates of the comment period under Subparagraph (4) of this Paragraph;

(E) the address where comments will be received;

(F) the name, phone number, and e-mail address of a person to contact for additional information;

(G) the procedures for requesting a public hearing; and

(H) other procedures by which the public may provide comments during the comment period under Subparagraph (4) of this Paragraph, such as social media or a web-based meeting, if the Division or the applicant elects to use such procedures.

(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.

- 1 (E) Public notice of the preparation of a draft permit or a notice of intent to deny a permit shall
2 allow at least 45 days for public comment.
- 3 (F) The Division shall give public notice of a public hearing at least 15 days before the hearing;
4 and the notice shall contain the date, time, and place of the public hearing; a description of
5 the nature and purpose of the public hearing, including the applicable rules and procedures;
6 and a statement of the issues raised by the persons requesting the hearing. Public notice of
7 the hearing may be given at the same time as public notice of the draft permit and the two
8 notices may be combined.
- 9 (G) Public notice of activities described in Part (A) of this Subparagraph shall be given by
10 publication on the Division website, by posting in the post office and public places of the
11 municipalities nearest the site under consideration, or publication by a local news
12 organization. The Division may also provide notice by posting on other State or local
13 government websites or social media to give actual notice of the activities to persons
14 potentially affected.
- 15 (H) All public notices issued under this Subparagraph shall contain the name, address and
16 phone number of the office processing the permit action for which notice is being given;
17 name and address of the owner and the operator applying for the permit; a description of
18 the business conducted at the facility or activity described in the permit application
19 including the size and location of the facility and type of waste accepted; a description of
20 the comment procedures required by Subparagraphs (5) and (6) of this Paragraph, including
21 a statement of procedures to request a public hearing unless a hearing has already been
22 scheduled, and other procedures by which the public may participate in the permit decision;
23 the name, address, and telephone number of the Division contact from whom interested
24 persons may obtain further information; and a description of the time frame and procedure
25 for making an approval or disapproval decision of the application.
- 26 (5) Public Comments and Requests for Public Hearings. During the public comment period provided,
27 any interested person may submit written comments on the draft permit and may request a public
28 hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing
29 and shall state the nature of the issues proposed to be raised in the hearing. The Division shall
30 consider all comments in making a final permit decision. The Division shall respond to all comments
31 as provided in Subparagraph (9) of this Paragraph.
- 32 (6) Public Hearings.
- 33 (A) The Division shall hold a public hearing on a draft permit(s) when a hearing is requested.
34 The Division may also hold a public hearing whenever such a hearing might clarify one or
35 more issues involved in the permit decision. Public hearings held pursuant to this Rule shall
36 be at a location accessible to the residents of the municipality closest 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 Division may set the time allowed for oral statements; and may require the submission of statements in writing. The Division shall extend the public comment period under Subparagraph (4) of this Paragraph to the close of any public hearing under this Subparagraph. The Division may also extend the 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 commenters 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. The Division shall publish the end date of the extended comment period on the Division's website prior to the end of the existing public comment period.

(C) The Division shall make available to the public a recording or written transcript of the hearing upon request.

(7) Reopening of the Public Comment Period.

(A) In response to data, information, or arguments received during the public comment period, the Division may prepare a revised draft permit under Subparagraph (2) of this Paragraph; prepare a revised fact sheet under Subparagraph (3) of this Paragraph, and reopen or extend the comment period under Subparagraph (4) of this Paragraph.

(B) Comments filed during the reopened comment period shall be limited to the information that was revised in the draft permit following the original comment period. The public notice shall be in accordance with Subparagraph (4) of this Paragraph and shall define the scope of the reopening.

(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 in accordance with Paragraph (d) of this Rule.

(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 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

1 change. The response shall also describe and respond to all comments pertaining to the
2 requirements in the draft permit raised during the public comment period, or during any
3 public hearing.

4 (B) The Division shall publish the response to comments on the Division website upon request.

5 (d) Permit approval or denial. The Division shall review all permit applications in accordance with Rule .0203 of this
6 Subchapter.

7
8 *History Note: Authority G.S. 130A-294;*
9 *Eff. October 9, 1993;*
10 *Readopted Eff. September 16, ~~2021~~, 2021;*
11 *Amended Eff. Pending Legislative Review.*
12

1 15A NCAC 13B .1617 is proposed for amendment as follows:

3 **15A NCAC 13B .1617 APPLICATION REQUIREMENTS FOR MSWLF FACILITIES**

4 (a) New permit as defined in G.S. 130A-294(a3)(1)a, c, d, and e. An applicant for a new MSWLF permit as defined
5 in G.S. 130A-294(a3)(1)a, c, d, and e shall meet the requirements of Rule .1618 of this Section prior to submitting an
6 application for a permit to construct.

7 (1) Permit to Construct. A complete application for a permit to construct for a new permit as defined in
8 G.S. 130A-294(a3)(1)a, c, d, and e shall contain the following:

9 (A) a facility plan that describes comprehensive development of the MSWLF facility prepared
10 in accordance with Rule .1619 of this Section;

11 (B) an engineering plan that is prepared for the initial phase of landfill development prepared
12 in accordance with Rule .1620 of this Section;

13 (C) a construction quality assurance plan prepared in accordance with Rule .1621 of this
14 Section;

15 (D) an operation plan prepared in accordance with Rule .1625 of this Section;

16 (E) a closure and post-closure plan prepared in accordance with Rule .1629 of this Section;

17 (F) the design hydrogeologic report and monitoring plans prepared in accordance with Rule
18 .1623(b) of this Section;

19 (G) an environmental compliance history for the applicant in accordance with G.S. 130A-
20 295.3; and

21 (H) for an applicant that is not a federal, State, or local government, an organization chart
22 showing the ownership structure of the applicant.

23 (2) Permit to Operate. The owner or operator shall meet the pre-operative requirements of the permit to
24 construct to qualify the constructed MSWLF unit for a permit to operate.

25 (b) New permit as defined in G.S. 130A-294(a3)(1)b. A complete application for a new MSWLF permit as defined
26 in G.S. 130A-294(a3)(1)b shall identify the proposed expansion and shall contain:

27 (1) a facility plan that describes the comprehensive development of the MSWLF facility prepared in
28 accordance with Rule .1619 of this Section;

29 (2) local government approval in accordance with Rule .1618(c)(6) of this Section;

30 (3) information that demonstrates compliance with the rules of this Section;

31 (4)(3) an environmental compliance history for the applicant in accordance with G.S. 130A-295.3; and

32 (5)(4) for an applicant that is not a federal, State, or local government, an organization chart showing the
33 ownership structure of the applicant.

34 (c) Amendment to the permit.

35 (1) An application for an amendment to the permit for a subsequent stage of landfill development in
36 accordance with Rule .1603(a)(2)(A) of this Section shall contain the following: contain:

37 (A)(4) an updated engineering plan prepared in accordance with Rule .1620 of this Section;

- ~~(B)(2)~~ an updated construction quality assurance plan prepared in accordance with Rule .1621 of this Section;
- ~~(C)(3)~~ an updated operation plan prepared in accordance with Rule .1625 of this Section;
- ~~(D)(4)~~ an updated closure and post-closure plan prepared in accordance with Rule .1629 of this Section;
- ~~(E)(5)~~ an updated design hydrogeologic report and monitoring plans prepared in accordance with Rule .1623(b) of this Section;
- ~~(F)(6)~~ an updated environmental compliance history for the applicant in accordance with G.S. 130A-295.3; and
- ~~(G)(7)~~ for an applicant that is not a federal, State, or local government, an updated organization chart showing the ownership structure of the applicant.

(2) An application for an amendment to the permit for a change in ownership or corporate structure in accordance with Rule .1603(a)(2)(B) of this Section shall contain the following:

- (A) a description of the proposed ownership change including affected facilities and permit numbers, the schedule for the change in ownership or corporate structure, and contact name and information for the applicant;
- (B) any changes to the facility name, property owner, facility operator, or billing contact names and contact information;
- (C) if the property owner changes, a copy of the recorded property deed for the new property owner;
- (D) for an applicant that is not a federal, State, or local government, an organization chart showing the ownership structure of the applicant, which shall be a business entity registered with the NC Secretary of State;
- (E) an environmental compliance history for the applicant in accordance with G.S. 130A-295.3;
- (F) any documentation that the Division may request to determine compliance with the requirements for financial responsibility for the applicant in accordance with G.S. 130A-295.2 and Section .1800 of this Subchapter, including an executed financial assurance mechanism for the applicant;
- (G) any updates to the cost estimates required to be submitted in accordance with Section .1800 of this Subchapter;
- (H) any modifications to the plans incorporated into the permit if changes are proposed by the applicant, or to correct any information included in the plans that has changed because of the change in ownership or corporate structure, such as the owner or operator names and contact information;
- (I) for any plans for which no changes or corrections are being made, a statement that the applicant shall continue to comply with the plans incorporated into the existing permit.

1 which shall be identified in the statement by the date they were incorporated, and the file
 2 identification number assigned by the Division to the file containing the incorporated plan;

3 (J) copies of any federal, State, or local government permits or approvals that were required
 4 for the facility permit approval to operate, and that have been revised because of the change
 5 to ownership or corporate structure, or a statement that these documents have not changed;
 6 and

7 (K) any additional information that the Division may request if it is necessary to determine
 8 whether any additional changes to the permit are necessary to comply with the rules of this
 9 Section.

10 (d) Modifications to the permit. The owner or operator may propose to modify plans that were prepared and approved
 11 in accordance with the requirements set forth in this Section. A complete application shall identify the requirement(s)
 12 proposed for modification and provide information that demonstrates compliance with the rules of this Section.

13 ~~(e) A permit for closure and post closure. An application for closure and post closure shall contain:~~

- 14 ~~(1) an updated engineering plan prepared in accordance with Rule .1620 of this Section;~~
 15 ~~(2) an updated construction quality assurance plan prepared in accordance with Rule .1621 of this~~
 16 ~~Section;~~
 17 ~~(3) an updated closure plan and updated post closure plan prepared in accordance with Rule .1629 of~~
 18 ~~this Section; and~~
 19 ~~(4) for an applicant that is not a federal, State, or local government, an updated organization chart~~
 20 ~~showing the ownership structure of the applicant.~~

21
 22 *History Note: Authority G.S. 130A-294;*
 23 *Eff. October 9, 1993;*
 24 *Readopted Eff. September 16, 2021, 2021;*
 25 *Amended Eff. Pending Legislative Review.*
 26

1 15A NCAC 13B .1627 is proposed for amendment as follows:

2
3 **15A NCAC 13B .1627 CLOSURE AND POST-CLOSURE REQUIREMENTS FOR MSWLF FACILITIES**

4 (a) Purpose. This Rule shall establish criteria for the closure of all MSWLF units and subsequent requirements for
5 post-closure compliance. The owner or operator shall develop specific plans for the closure and post-closure of the
6 MSWLF facility or units that comply with Rule .1629 of this Section, and submit them to the Division for review and
7 approval.

8 (b) Scope.

9 (1) This Rule shall establish standards for the scheduling and documenting closure of all MSWLF units,
10 and design of the cap system. Construction requirements for the cap system shall incorporate
11 specific requirements from Rule .1624 of this Section.

12 (2) This Rule shall establish standards for the monitoring and maintenance of the MSWLF unit(s)
13 following closure.

14 (c) Closure criteria.

15 (1) An MSWLF unit shall have a cap system installed that shall be designed and constructed to:

16 (A) have a permeability less than or equal to the permeability of any base liner system or the
17 in-situ subsoils underlying the landfill, or the permeability specified for the final cover in
18 the effective permit, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less;

19 (B) minimize infiltration through the closed MSWLF unit by the use of a low-permeability
20 barrier that contains a minimum 18 inches of earthen material; and

21 (C) minimize erosion of the cap system and protect the low-permeability barrier from root
22 penetration by use of an erosion layer that contains no less than six inches of earthen
23 material that is capable of sustaining native plant growth.

24 (2) The owner or operator may submit a request for an alternative cap system or alternative post-
25 settlement slopes in the closure and post-closure care plan submitted in accordance with Rule .1629
26 of the Section. The request shall include a demonstration of the following:

27 (A) the alternative cap system will achieve a reduction in infiltration equivalent to or greater
28 than the low-permeability barrier specified in Subparagraph (1) of this Paragraph; and

29 (B) the erosion layer will provide protection equivalent to or greater than the erosion layer
30 specified in Subparagraph ~~(3)~~ (1) of this Paragraph.

31 (3) Construction of the cap system for all MSWLF units shall conform to the requirements set forth in
32 Rule .1624(b)(8), (b)(9), (b)(10), (b)(14), and (b)(15) of this Section and the following requirements:

33 (A) post-settlement surface slopes shall be a minimum of five percent and a maximum of 25
34 percent; and

35 (B) a gas venting or collection system shall be installed below the low-permeability barrier to
36 minimize pressures exerted on the barrier.

- 1 (4) Prior to beginning closure of each MSWLF unit as specified in Subparagraph (5) of this Paragraph,
2 an owner or operator shall notify the Division in writing that a notice of the intent to close the unit
3 has been placed in the operating record.
- 4 (5) The owner or operator shall begin closure activities of each MSWLF unit no later than 30 days after
5 the date on which the MSWLF unit receives the known final receipt of wastes or no later than one
6 year after the most recent receipt of wastes, if the MSWLF unit has remaining capacity. Extensions
7 beyond the deadline for beginning closure may be granted by the Division if the owner or operator
8 demonstrates that the MSWLF unit has the capacity to receive additional wastes and the owner or
9 operator has and will continue to prevent threats to human health and the environment from the
10 unclosed MSWLF unit.
- 11 (6) The owner or operator of all MSWLF units shall complete closure activities of each MSWLF unit
12 in accordance with the closure plan within 180 days following the beginning of closure as specified
13 in Subparagraph (5) of this Paragraph. Extensions of the closure period may be granted by the
14 Division if the owner or operator demonstrates that closure will, of necessity, take longer than 180
15 days and they have and will continue to prevent threats to human health and the environment from
16 the unclosed MSWLF unit.
- 17 (7) Following closure of each MSWLF unit, the owner or operator shall notify the Division that a
18 certification, signed by the project engineer verifying that closure has been completed in accordance
19 with the closure plan, has been placed in the operating record.
- 20 ~~(8)~~ 180 days prior to beginning closure of the final permitted MSWLF unit, an owner or operator shall
21 submit to the Division in writing a notice of intent to close the final unit; and place a copy of the
22 notice in the operating record. The notice shall include the anticipated date that the facility will cease
23 waste acceptance, and a statement identifying the plans that were incorporated into the permit that
24 the owner or operator will comply with during the closure and post-closure care period. The notice
25 shall include the dates that the plans were incorporated into the facility's permit and the file
26 identification numbers that were assigned by the Division to the files containing these plans. If the
27 owner or operator determines that updates or revisions to the plans are necessary, the owner or
28 operator shall submit any changes to the plans to the Division as a permit modification in accordance
29 with Rules .1603(a)(3) and .1617(d) of this Section.
- 30 ~~(9)(8)~~ Recordation. Following closure of all MSWLF units, the owner or operator shall record a notice for
31 the landfill facility property at the local county Register of Deeds office; and notify the Division
32 that the notice has been recorded and a copy has been placed in the operating record. The notice
33 may be a notation on the deed to the landfill facility property, or may be some other instrument such
34 as a declaration of restrictions on the property that is discoverable during a title search for the landfill
35 facility property. The notice shall notify any potential purchaser of the property that the land has
36 been used as a landfill facility and future use is restricted under the closure plan approved by the
37 Division. The owner or operator may request approval from the Division to remove the notice. The

1 Division shall approve removal of the notice if all wastes are removed from the landfill facility
2 property.

3 (d) Post-closure criteria.

4 (1) Following closure of each MSWLF unit, the owner or operator shall conduct post-closure care.
5 Post-closure care shall be conducted for 30 years, except as provided under Subparagraph (2) of this
6 Paragraph, and consist of the following:

- 7 (A) maintaining the integrity and effectiveness of any cap system, including making repairs to
8 the cover as necessary to correct the effects of settlement, subsidence, erosion, or other
9 events, and preventing rainwater that drains over land from or onto any part of the facility
10 or unit from eroding or damaging the cap system;
- 11 (B) monitoring the surface water and groundwater in accordance with the requirements of
12 Rules .1623(b)(3)(B) and .1630 through .1637 of this Section, and maintaining the
13 groundwater monitoring system;
- 14 (C) maintaining and operating the gas monitoring system in accordance with the requirements
15 of Rule .1626 of this Section; and
- 16 (D) maintaining, operating, and decommissioning the leachate collection system in accordance
17 with the requirements in Rules .1624 and .1626 of this Section. The owner or operator may
18 submit a request to stop managing leachate in writing to the Division. The request shall
19 include a demonstration with supporting documentation that the operation and maintenance
20 of leachate management systems during the active life, closure, and post-closure care
21 period of the MSWLF unit complied with the permit including the plans incorporated into
22 the permit, the rules of this Subchapter, and 15A NCAC 02B and 02L; and that the current
23 and projected volume of leachate generated and the results of leachate sample analysis
24 during the post-closure care period indicate that the leachate no longer poses a threat to
25 human health and the environment. The demonstration shall also include the certifications
26 required by Subparagraph (3) of this Paragraph. The Division shall consider the
27 information required to be submitted in the demonstration and the owner or operator's
28 compliance history to make a determination on approval of the request.

29 (2) The length of the post-closure care period may be:

- 30 (A) decreased by the Division if the owner or operator demonstrates that the reduced period is
31 protective of human health and the environment and this demonstration is approved by the
32 Division; or
- 33 (B) increased by the Division if the Division determines that the lengthened period is necessary
34 to protect human health and the environment.

35 (3) Every five years during the post-closure care period and following completion of the post-closure
36 care period for each MSWLF unit, the owner or operator shall notify the Division that a certification
37 verifying that post-closure care has been conducted in accordance with the post-closure ~~plan plan,~~

1 has been placed in the operating record. If required by G.S. 89C, the certification shall be signed by
2 a licensed professional engineer.

3
4 *History Note: Authority G.S. 130A-294;*
5 *Eff. October 9, 1993;*
6 *Readopted Eff. September 16, ~~2021~~, 2021;*
7 *Amended Eff. Pending Legislative Review.*
8

1 15A NCAC 13B .1631 is proposed for amendment as follows:

3 **15A NCAC 13B .1631 GROUNDWATER MONITORING SYSTEMS**

4 (a) A groundwater monitoring system shall be installed that consists of no less than one background and three
5 downgradient wells installed at locations and depths that yield groundwater samples from the uppermost aquifer that:

6 (1) Represent the quality of the background groundwater that has not been affected by leakage from the
7 unit. Determination of background groundwater quality shall be based on sampling of a well or
8 wells that are hydraulically upgradient of the waste management area. However, the determination
9 of background water quality may include sampling of wells that are not hydraulically upgradient of
10 the waste management area where:

11 (A) hydrogeologic conditions do not allow the owner or operator to determine which wells are
12 hydraulically upgradient; ~~or~~

13 (B) hydrogeologic conditions do not allow the owner or operator to place a well in a
14 hydraulically upgradient location; or

15 (C) sampling at other wells will provide an indication of background groundwater quality that
16 is as representative as that provided by the upgradient well(s); and

17 (2) Represent the quality of groundwater passing the relevant point of compliance as approved by the
18 Division. The downgradient monitoring system shall be installed at the relevant point of compliance
19 to ensure detection of groundwater contamination in the uppermost aquifer. The relevant point of
20 compliance shall be established no more than 250 feet from a waste boundary, and shall be at least
21 50 feet within the facility property boundary. In determining the relevant point of compliance, the
22 Division shall consider recommendations made by the owner or operator based upon consideration
23 of the following factors:

24 (A) the hydrogeologic characteristics of the facility and surrounding land;

25 (B) the volume and physical and chemical characteristics of the leachate;

26 (C) the quantity, quality, and direction of groundwater flow;

27 (D) the proximity and withdrawal rate of the groundwater users;

28 (E) the availability of alternative drinking water supplies;

29 (F) the existing quality of the groundwater, including other sources of contamination and their
30 cumulative impacts on the groundwater, and whether the groundwater is currently used or
31 expected to be used for drinking water;

32 (G) any potential effects on public health, safety, and welfare; and

33 (H) practicable capability of the owner or operator.

34 (b) Monitoring wells shall be designed and constructed in accordance with 15A NCAC 02C.

35 (1) Owner or operators shall obtain approval from the Division for the design, installation, development,
36 and decommission of any monitoring well or piezometer. Documentation shall be placed in the
37 operating record and provided to the Division in a timely manner.

- (2) The monitoring wells and piezometers shall be operated and maintained so that they perform to design specifications throughout the life of the monitoring program.
- (c) The number, spacing, and depths of monitoring systems shall be determined based upon site-specific technical information that shall include investigation of:
- (1) aquifer thickness; groundwater flow rate; groundwater flow direction; and seasonal and temporal fluctuations in groundwater flow and water table; and
 - (2) unsaturated and saturated geologic units and any fill materials within the uppermost aquifer; including thicknesses, stratigraphy, lithology, hydraulic conductivities, porosities, and effective porosities.
- (d) The proposed monitoring system and the water quality monitoring plan required in Paragraph (f) of this Rule shall be capable of providing detection of any release of monitored constituents from any point in a disposal cell or leachate surface impoundment to the uppermost aquifer. If required by G.S. 89C or 89E, the proposed monitoring system and water quality monitoring plan shall be certified by a licensed professional engineer or a licensed geologist.
- (e) In addition to groundwater monitoring wells, the use of alternative monitoring systems may be:
- (1) required by the Division at sites where the owner or operator does not control the property from any landfill unit to the groundwater discharge feature(s); or
 - (2) allowed by the Division at sites where hydrogeologic conditions are favorable for detection monitoring by alternative methods.
- (f) The owner or operator shall submit a water quality monitoring plan for review and approval by the Division as required by Rules .1603 and .1617 of this Section. The water quality monitoring plan ~~Water Quality Monitoring Plan~~ shall contain information on the groundwater monitoring system(s) and locations, surface water sampling locations, sampling and analysis requirements, and monitoring required under Rules .1630 through .1637 of this Section. The Division shall date and stamp the water quality monitoring plan ~~Water Quality Monitoring Plan~~ "approved" if the plan meets the conditions of this Rule. Upon approval by the Division, a copy of the approved water quality monitoring plan ~~Water Quality Monitoring Plan~~ shall be placed in the operating record.
- (g) Groundwater quality standards and interim maximum allowable concentrations established under 15A NCAC 02L or groundwater protection standards established in accordance with Rule .1634(b) of this Section shall not be exceeded in the uppermost aquifer at the compliance boundary.

History Note: Authority G.S. 130A-294;
Eff. October 9, 1993;
Readopted Eff. September 16, 2021, 2021;
Amended Eff. Pending Legislative Review.

1 15A NCAC 13B .1632 is proposed for amendment as follows:

2
3 **15A NCAC 13B .1632 GROUNDWATER SAMPLING AND ANALYSIS REQUIREMENTS**

4 (a) The owner or operator shall describe consistent sampling and analysis procedures designed to ensure monitoring
5 results that provide an accurate representation of groundwater quality at the background and downgradient wells in
6 the water quality monitoring plan approved in accordance with Rule .1631(f) of this Section. The plan shall include
7 procedures and techniques for sample collection; sample preservation and shipment; analytical procedures; chain of
8 custody control; and quality assurance and quality control.

9 (b) The groundwater monitoring program shall include sampling and analytical methods for groundwater sampling
10 that measure monitored constituents and other monitoring parameters in groundwater samples.

11 (c) The sampling procedures and frequency shall be protective of human health and the environment.

12 (d) Each time groundwater is sampled, groundwater elevations shall be measured in each well prior to purging. The
13 owner or operator shall determine the rate and direction of groundwater flow each time groundwater is sampled.
14 Groundwater elevations in wells that monitor the same waste management area shall be measured within a 24-hour
15 period of time to avoid temporal variations in groundwater flow that could preclude accurate determination of
16 groundwater flow rate and direction. The owner or operator shall determine groundwater elevation and flow as
17 follows:

- 18 (1) To determine accurate groundwater elevations for each monitoring well, the wells shall have been
19 surveyed. If required by G.S. 89C, a licensed professional land surveyor shall survey the wells.
20 [Note: The North Carolina Board of Examiners for Engineers and Surveyors has determined, via a
21 letter dated July 16, 2010, that the surveying pursuant to this Paragraph constitutes practicing
22 surveying under G.S. 89C.] The survey of the wells shall conform to the following levels of
23 accuracy:

- 24 (A) the horizontal location to the nearest 0.1 foot;
25 (B) the vertical control for the ground surface elevation to the nearest 0.01 foot; and
26 (C) the vertical control for the measuring reference point on the top of the inner well casing to
27 the nearest 0.01 foot.

- 28 (2) To determine the rate of groundwater flow, the owner or operator shall provide data for hydraulic
29 conductivity and porosity for the formation materials at each of the well locations.

30 (e) The owner or operator shall establish background groundwater quality in accordance with Rule .1631(a)(1) of this
31 Section and Paragraphs (f) through (h) of this Rule for each of the monitoring parameters or constituents required in
32 the particular groundwater monitoring program that applies to the MSWLF unit.

33 (f) The number of samples collected to establish groundwater quality data shall be consistent with the statistical
34 procedures to be used, as provided for in Paragraph (g) of this Rule.

35 (g) Should the owner or operator choose to perform statistical analysis of groundwater quality data for the purpose of
36 establishing background concentrations or to determine if there is an exceedance of the groundwater quality standards
37 ~~and interim maximum allowable concentrations (IMACs)~~ established in 15A NCAC 02L or the groundwater

1 protection standard established in Rule .1634(b) of this Section, the owner or operator shall select one of the following
2 statistical methods to be used in evaluating groundwater monitoring data for each constituent of concern. The statistical
3 test chosen shall be conducted separately for each constituent of concern in each well.

- 4 (1) A parametric analysis of variance (ANOVA) followed by multiple comparisons procedures to
5 identify statistically significant evidence of contamination. The method shall include estimation and
6 testing of the contrasts between each compliance well's mean and the background mean levels for
7 each constituent.
- 8 (2) A parametric analysis of variance (ANOVA) based on ranks followed by multiple comparisons
9 procedures to identify statistically significant evidence of contamination. The method shall include
10 estimation and testing of the contrasts between each compliance well's median and the background
11 median levels for each constituent.
- 12 (3) A tolerance or prediction interval procedure in which an interval for each constituent is established
13 from the distribution of the background data, and the level of each constituent in each compliance
14 well is compared to the upper tolerance or prediction limit.
- 15 (4) A control chart approach that gives control limits for each constituent.
- 16 (5) Another statistical test method that meets the performance standards of this Rule. The owner or
17 operator shall submit a justification for an alternative test method to the Division for approval to
18 determine compliance with this Rule. The justification shall demonstrate that the alternative
19 statistical test method meets the performance standards of this Rule. If approved, the owner or
20 operator shall place a copy of the justification for an alternative test method in the operating record.

21 (h) Any statistical method chosen to evaluate groundwater monitoring data shall comply with the following
22 performance standards:

- 23 (1) The statistical method used to evaluate groundwater monitoring data shall be appropriate for the
24 distribution of chemical parameters or constituents of concern. If the distribution of the chemical
25 parameters or constituents of concern is shown by the owner or operator, or by the Division, to be
26 inappropriate for a normal theory test, then the data shall be transformed or a distribution-free theory
27 test shall be used. If the distributions for the constituents differ, more than one statistical method
28 shall be considered.
- 29 (2) If an individual well comparison procedure is used to compare an individual compliance well
30 constituent concentration with background constituent concentrations or a groundwater protection
31 standard, the test shall be done at a Type I error level no less than 0.01 for each testing period. If a
32 multiple comparisons procedure is used, the Type I experiment wise error rate for each testing period
33 shall be no less than 0.05; however, the Type I error of no less than 0.01 for individual well
34 comparisons shall be maintained. This performance standard shall not apply to tolerance intervals,
35 prediction intervals, or control charts.
- 36 (3) If a control chart approach is used to evaluate groundwater monitoring data, the specific type of
37 control chart and its associated parameter values shall be protective of human health and the

environment. The parameters shall be determined by the analyst after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.

- (4) If a tolerance interval or a prediction interval is used to evaluate groundwater monitoring data, the levels of confidence and, for tolerance intervals, the percentage of the population that the interval shall contain, shall be protective of human health and the environment. These parameters shall be determined by the analyst after considering the number of samples in the background database, the data distribution, and the range of the concentration values for each constituent of concern.

- (5) The statistical method shall account for data below the limit of detection with one or more statistical procedures that are protective of human health and the environment. Any practical quantitation limit (pql) that is used in the statistical method shall be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility.

- (6) If necessary, as provided for in 40 CFR 258, the statistical method shall include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.

(i) Within 120 days from the date of sampling or as specified in the facility permit, whichever is less, the owner or operator shall submit to the Division a monitoring report in an electronic format that is accessible and viewable by the Division that includes information from the sampling event including field observations relating to the condition of the monitoring wells, field data, the laboratory analytical data report, statistical analysis (if utilized), field sampling methods and quality assurance and quality control data, information on groundwater flow direction, groundwater flow rate, and, for each well, any constituents that exceed groundwater quality standards and IMACs set forth in 15A NCAC 02L .0202 or the groundwater protection standards established in Rule .1634(b) of this Section.

History Note: Authority G.S. 130A-294;
Eff. October 9, 1993;
Amended Eff. April 1, 2011;
Readopted Eff. September 16, 2021, 2021;
Amended Eff. Pending Legislative Review.

1 15A NCAC 13B .1633 is proposed for amendment as follows:

2
3 **15A NCAC 13B .1633 DETECTION MONITORING PROGRAM**

4 (a) Detection monitoring shall be conducted at MSWLF units at all groundwater monitoring wells that are part of the
5 detection monitoring system as established in the approved water quality monitoring plan. As provided for in 40 CFR
6 258, the detection monitoring program shall include monitoring for the constituents listed in Appendix I of 40 CFR
7 258.

8 (b) The monitoring frequency for all Appendix I detection monitoring constituents shall be no less than semiannual
9 during the active life of the facility and during closure and the post-closure period. To establish the baseline, no less
10 than four independent samples from each background and downgradient monitoring well shall be collected within a
11 six-month period and analyzed for constituents listed in Appendix I of 40 CFR 258, with no less than one sample
12 collected from each new monitoring well before waste placement in each new cell or phase. No less than one sample
13 from each background and downgradient monitoring well shall be collected and analyzed during subsequent
14 semiannual sampling events.

15 (c) The Division may approve an alternate frequency, no less than annually, for repeated sampling and analysis for
16 constituents required by Paragraph (b) of this Rule, during the active life and post-closure care of the unit considering
17 the following factors:

- 18 (1) lithology of the aquifer and unsaturated zone;
- 19 (2) hydraulic conductivity of the aquifer and unsaturated zone;
- 20 (3) groundwater flow rates;
- 21 (4) minimum distance between the upgradient edge of the MSWLF unit and the downgradient
22 monitoring well screened interval;
- 23 (5) resource value of the aquifer; and
- 24 (6) nature, fate, and transport of any detected constituents.

25 (d) If the owner or operator determines that there is an exceedance of the groundwater quality standards ~~or interim~~
26 ~~maximum allowable concentrations (IMACs)~~ established in accordance with 15A NCAC 02L .0202, or the
27 groundwater protection standards established in accordance with Rule .1634(b) of this Section for one or more of the
28 constituents required to be monitored in Paragraph (a) of this Rule at any monitoring well, the owner or operator:

- 29 (1) shall, within 14 days of this determination, report to the Division and place a notice in the operating
30 record indicating which constituents have exceeded groundwater quality standards ~~or IMACs~~
31 established in accordance with 15A NCAC 02L .0202, or the groundwater protection standards
32 established in accordance with Rule .1634(b) of this Section;
- 33 (2) shall establish an assessment monitoring program meeting the requirements of Rule .1634 of this
34 Section within 90 days except as provided for in Subparagraph (3) of this Paragraph; and
- 35 (3) may demonstrate that a source other than a MSWLF unit caused the exceedance, or the exceedance
36 resulted from an error in sampling, analysis, statistical evaluation, or natural variation in
37 groundwater quality. A report documenting this demonstration shall be submitted to the Division

1 for approval. If required by G.S. 89C or G.S. 89E, a licensed professional engineer or licensed
2 geologist shall prepare these documents. [Note: The North Carolina Board of Examiners for
3 Engineers and Surveyors and the Board of Licensing of Geologist has determined, via letters dated
4 July 16, 2010 and November 30, 2010 respectively, that preparation of documents pursuant to this
5 Paragraph constitutes practicing engineering or geology under G.S. 89C and G.S. 89E.] A copy of
6 this report shall also be placed in the operating record. If a successful demonstration is made,
7 documented, and approved by the Division, the owner or operator may continue detection
8 monitoring. If after 90 days, a successful demonstration is not made, the owner or operator shall
9 initiate an assessment monitoring program as required by Rule .1634 of this Section.
10

11 *History Note: Authority G.S. 130A-294;*
12 *Eff. October 9, 1993;*
13 *Amended Eff. April 1, 2011;*
14 *Readopted Eff. September 16, ~~2021~~, 2021;*
15 *Amended Eff. Pending Legislative Review.*
16

1 15A NCAC 13B .1634 is proposed for amendment as follows:

2
3 **15A NCAC 13B .1634 ASSESSMENT MONITORING PROGRAM**

4 (a) Assessment monitoring shall be required if, in any sampling event, one or more constituents listed in 40 CFR 258
5 Appendix I is detected above the groundwater quality standards ~~or interim maximum allowable concentrations~~
6 ~~(IMACs)~~ established in accordance with 15A NCAC 02L .0202, or the groundwater protection standards established
7 in accordance with Paragraph (b) of this Rule.

8 (b) Assessment Requirements. Within 90 days of triggering an assessment monitoring program in accordance with
9 Rule .1633(d)(2) of this Section, the owner or operator shall conduct an assessment in accordance with the following:

10 (1) Install additional wells downgradient of the compliance wells where exceedances have been
11 detected to characterize the nature and extent of the contamination. The additional wells shall
12 include no less than one additional groundwater monitoring well at the facility's property boundary
13 or the compliance boundary, as defined in 15A NCAC 02L .0102, in the direction of contaminant
14 migration most likely to show impact based on the established geology and hydrogeology.

15 (2) Collect no less than one groundwater sample from each downgradient monitoring well, including
16 any well installed in accordance with Subparagraph (1) of this Paragraph, and analyze for the
17 constituents listed in 40 CFR 258 Appendix II. The Division may remove any of the 40 CFR 258
18 Appendix II constituents, not also listed in Appendix I, from the monitoring list for a MSWLF unit
19 if the owner or operator can show that the constituents proposed for removal are not expected to be
20 in or derived from the waste contained in the unit. After the initial sampling event, for any
21 constituent detected in the downgradient wells as a result of the Appendix II analysis, no less than
22 three additional independent samples from each downgradient monitoring well and no less than four
23 independent samples from each background well shall be collected and analyzed to establish a
24 baseline for the new detected constituents. Once determined, baseline data for the new detected
25 constituents shall be reported to the Division.

26 (3) For constituents that do not have a groundwater quality standard ~~or IMAC~~ established in accordance
27 with 15A NCAC 02L .0202, the Division shall establish a groundwater protection standard for each
28 constituent detected in groundwater. The groundwater protection standard shall be the most
29 protective of the following:

30 (A) for constituents for which a maximum contaminant level (MCL) has been promulgated
31 under 40 CFR 141, the MCL for that constituent;

32 (B) for constituents for which a public water quality standard has been established under 15A
33 NCAC 18C, the public water quality standard for that constituent; or

34 (C) for constituents for which no MCLs or public water quality standards have been
35 promulgated, the background concentration for the constituent established from the
36 monitoring wells required in accordance with Rules .1631(a)(1) and .1632 of this Section.

- 1 (4) The Division may establish an alternative groundwater protection standard for constituents for
 2 which no MCL or public water quality standard have been established. These groundwater
 3 protection standards shall be health-based levels that satisfy the following criteria:
- 4 (A) the level is derived in a manner consistent with U.S. E.P.A. guidelines provided in 40 CFR
 5 258.55(i)(1) for assessing the health risks of environmental pollutants;
- 6 (B) the level is based on scientifically valid studies conducted in accordance with 40 CFR 792;
- 7 (C) for carcinogens, the level represents a concentration associated with an excess lifetime
 8 cancer risk level due to continuous lifetime exposure of 1×10^{-6} ; and
- 9 (D) for systemic toxicants, the level represents a concentration to which the human population,
 10 including sensitive subgroups, could be exposed on a daily basis that is likely to be without
 11 appreciable risk of deleterious effects during a lifetime. For the purposes of this Rule,
 12 systemic toxicants include toxic chemicals that cause effects other than cancer or mutation.
- 13 (5) In establishing groundwater protection standards under this Paragraph, the Division shall consider
 14 the following:
- 15 (A) multiple contaminants in the groundwater;
- 16 (B) exposure threats to sensitive environmental receptors; and
- 17 (C) other site-specific exposure or potential exposure to groundwater.
- 18 (6) The owner or operator may request that the Division approve a background level for the unit that is
 19 higher than the groundwater quality standard ~~or IMAC~~ established in 15A NCAC 02L .0202 or the
 20 groundwater protection standard established in Subparagraph (3) or (4) of this Paragraph. The
 21 background level shall be established in accordance with Rule .1632(e) of this Section. The
 22 approved background level shall be the established groundwater protection standard.
- 23 (c) Assessment Monitoring. After obtaining the results from the initial sampling event required in Subparagraph (b)(2)
 24 of this Rule, the owner or operator shall perform assessment monitoring in accordance with the following:
- 25 (1) For each assessment monitoring event, the owner or operator shall submit a monitoring report to the
 26 Division as required by Rule .1632(i) of this Section and, if required by G.S. 89E, the report shall
 27 be certified by a licensed geologist. Any monitoring report submitted during assessment shall
 28 contain a summary description of assessment activities conducted in accordance with Paragraph (b)
 29 of this Rule that have not previously been reported to the Division, including boring logs and well
 30 installation records.
- 31 (2) Within 30 days of obtaining the results of the sampling event, the owner or operator shall notify all
 32 persons who own land or reside on land that overlies any part of the plume of contamination if
 33 contaminants have migrated off-site.
- 34 (3) Within 14 days of receipt of the analytical results, the owner or operator shall submit notice to the
 35 Division in writing and place the notice in the operating record identifying the 40 CFR 258
 36 Appendix II constituents that have not previously been detected and reported to the Division.

(4) Within 90 days, and no less than semiannually thereafter until the Division approves a return to detection monitoring in accordance with Paragraph (e) of this Rule, the owner or operator shall sample all of the monitoring wells for the unit in the monitoring system established in Rule .1633 of this Section and in Subparagraph (b)(1) of this Rule for all constituents listed in 40 CFR 258 Appendix I, and for those constituents in Appendix II not listed in Appendix I that have been detected. Any well with a reported groundwater standard exceedance shall be sampled for all constituents in 40 CFR 258 Appendix II no less than annually unless otherwise approved in accordance with Subparagraph (6) of this Paragraph or Subparagraph (b)(2) of this Rule. A report from each sampling event shall be submitted to the Division and placed in the facility operating record. No less than one sample from each background and downgradient monitoring well shall be collected and analyzed during each of these sampling events.

(5) The owner or operator shall establish and report to the Division the background or baseline concentrations for any constituents detected.

(6) The Division may approve an alternate frequency, no less than annually, or an alternate subset of wells for repeated sampling and analysis for constituents required by Paragraph (b) of this Rule, during the active life and post-closure care of the unit considering the following factors:

- (A) lithology of the aquifer and unsaturated zone;
- (B) hydraulic conductivity of the aquifer and unsaturated zone;
- (C) groundwater flow rates;
- (D) minimum distance between the upgradient edge of the MSWLF unit and the downgradient monitoring well screened interval;
- (E) resource value of the aquifer; and
- (F) nature, fate, and transport of any detected constituents.

(d) During assessment monitoring, the owner or operator may demonstrate, in accordance with Rule .1633(d)(3) of this Section for any constituent not previously reported to have a groundwater standard exceedance, that a source other than a MSWLF unit caused the exceedance of the groundwater quality standards ~~and IMACs~~ established in accordance with 15A NCAC 02L .0202 or the groundwater protection standards established in accordance with Paragraph (b) of this Rule, or that the exceedance resulted from error in sampling, analysis, or natural variation in groundwater quality. If a successful demonstration is made for each exceedance, the owner or operator shall continue the existing assessment monitoring that was required by Paragraph (c) of this Rule unless and until the requirements of Paragraph (e) of this Rule are met.

(e) The Division shall give approval to the owner or operator to return to detection monitoring in accordance with Rule .1633 of this Section if all of the following are met:

- (1) for two consecutive sampling events, the concentrations of the constituents are shown to be at or below groundwater quality standards ~~and IMACs~~ established in 15A NCAC 02L .0202, or the groundwater protection standards established in accordance with Paragraph (b) of this Rule;
- (2) the plume is not migrating horizontally or vertically; and

1 (3) the plume has not exceeded the compliance boundary.

2 (f) If one or more Appendix II constituents are detected for two consecutive sampling events above background, the
3 groundwater quality standards ~~and IMACs~~ established in 15A NCAC 02L .0202, or the groundwater protection
4 standards established in accordance with Paragraph (b) of this Rule, the owner or operator shall initiate assessment of
5 corrective measures in accordance with Rule .1635 of this Section.

6
7 *History Note: Authority G.S. 130A-294;*

8 *Eff. October 9, 1993;*

9 *Amended Eff. April 1, 2011;*

10 *Readopted Eff. September 16, ~~2021~~, 2021;*

11 *Amended Eff. Pending Legislative Review.*

12

1 15A NCAC 13B .1635 is proposed for amendment as follows:

3 **15A NCAC 13B .1635 ASSESSMENT OF CORRECTIVE MEASURES**

4 (a) Within 90 days of finding that one or more Appendix II constituents exceeded, for two consecutive sampling
5 events, either the groundwater quality standards ~~or IMACs~~ established in 15A NCAC 02L .0202, the groundwater
6 protection standards established in accordance with Rule .1634(b) of this Section, or an approved background value,
7 the owner or operator shall initiate assessment of corrective action measures. Such an assessment shall be completed
8 within 120 days.

9 (b) The owner or operator shall continue to monitor in accordance with the approved assessment monitoring program.

10 (c) The owner or operator shall analyze the effectiveness of potential corrective measures in meeting all of the
11 requirements and objectives of the remedy as described under Rule .1636 of this Section. The owner or operator shall
12 address the following, as provided for in 40 CFR 258:

- 13 (1) the performance, reliability, ease of implementation, and potential impacts of potential remedies,
14 including safety impacts, cross-media impacts, and control of exposure to any residual
15 contamination;
- 16 (2) the time required to begin and complete the remedy;
- 17 (3) the costs of remedy implementation; and
- 18 (4) the institutional requirements such as State and local permit requirements or other environmental or
19 public health requirements that may affect implementation of the remedy(s).

20 (d) Within 120 days of completion of the assessment of corrective measures as set forth in Paragraph (a) of this Rule
21 and prior to the selection of a remedy, the owner or operator shall discuss the results of the assessment of corrective
22 ~~measures~~ measures, in a public meeting with interested and affected parties. The owner or operator shall provide a
23 public notice of the meeting at least 30 days prior to the meeting. The notice shall include the time, place, date, and
24 purpose of the public meeting. A copy of the public notice shall be forwarded to the Division at least five days prior
25 to publication. Public notice shall be provided to interested and affected parties by the following methods:

- 26 (1) publication on the owner or operator's official business website and social media websites;
- 27 (2) posting in the post office and public places of the municipalities nearest the site under consideration,
28 or on the websites of these public places;
- 29 (3) a news release by a local news organization serving the county where the site under consideration
30 is located; and
- 31 (4) to persons requesting notification, sending to the mailing address or e-mail address provided by
32 those persons.

34 *History Note: Authority G.S. 130A-294;*
35 *Eff. October 9, 1993;*
36 *Amended Eff. May 1, 2011;*
37 *Readopted Eff. September 16, ~~2021~~ 2021;*

1 Amended Eff. Pending Legislative Review.

2

1 15A NCAC 13B .1636 is proposed for amendment as follows:

2
3 **15A NCAC 13B .1636 SELECTION OF REMEDY**

4 (a) Based on the results of the assessment of corrective measures in accordance with Rule .1635 of this Section, the
5 owner or operator shall select a remedy ~~that that~~, meets the standards listed in Paragraph (b) of this Rule. Within 14
6 days of selecting a remedy, the permittee shall submit an application to modify the permit describing the selected
7 remedy to the Division for review and approval that the remedy complies with this Rule. The application shall be
8 subject to the processing requirements set forth in Rule .1603(c) of this Section. The application shall include the
9 demonstrations necessary to comply with the financial assurance requirements set forth in Rule .1628 of this Section
10 and Section .1800 of this Subchapter.

11 (b) Remedies shall:

- 12 (1) be protective of human health and the environment;
- 13 (2) attain the approved groundwater quality standards ~~and IMACs~~ established in accordance with 15A
14 NCAC 02L .0202, or the groundwater protection standards established in accordance with Rule
15 .1634(b) of this Section;
- 16 (3) control the source(s) of releases to reduce or eliminate, to the maximum extent practicable, further
17 releases of 40 CFR 258 Appendix II constituents into the environment; and
- 18 (4) comply with standards for management of wastes as specified in Rule .1637(e) of this Section.

19 (c) In selecting a remedy that meets the standards of Paragraph (b) of this Rule, the owner or operator shall consider
20 the following factors:

- 21 (1) The long-term and short-term effectiveness and protectiveness of the potential remedy(s), along
22 with the degree of certainty that the remedy will prove successful based on consideration of the
23 following:
- 24 (A) magnitude of reduction of existing risks;
- 25 (B) magnitude of residual risks in terms of likelihood of further releases due to wastes
26 remaining following implementation of a remedy;
- 27 (C) the type and degree of long-term management required, including monitoring, operation,
28 and maintenance;
- 29 (D) short-term risks that might be posed to the community, to workers, or to the environment
30 during implementation of such a remedy, including potential threats to human health and
31 the environment associated with excavation, transportation, and redisposal or containment;
- 32 (E) time until full protection is achieved;
- 33 (F) potential for exposure of humans and environmental receptors to remaining wastes,
34 considering the potential threat to human health and the environment associated with
35 excavation, transportation, redisposal, or containment;
- 36 (G) long-term reliability of the engineering and institutional controls; and
- 37 (H) potential need for replacement of the remedy.

- 1 (2) The effectiveness of the remedy in controlling the source to reduce further releases based on
2 consideration of the extent to which containment practices will reduce further releases, and the
3 extent to which treatment technologies may be used.
- 4 (3) The ease or difficulty of implementing a potential remedy based on consideration of the following
5 types of factors:
 - 6 (A) the degree of difficulty associated with constructing the technology;
 - 7 (B) the expected operational reliability of the technologies;
 - 8 (C) the need to coordinate with and obtain necessary approvals and permits from other
9 agencies;
 - 10 (D) the availability of necessary equipment and specialists; and
 - 11 (E) the available capacity and location of needed treatment, storage, and disposal services.
- 12 (4) The practicable capability of the owner or operator, including a consideration of the technical and
13 economic capability.
- 14 (5) The degree to which community concerns are addressed by a potential remedy.
- 15 (d) The owner or operator shall specify as part of the selected remedy a schedule for initiating and completing remedial
16 activities. This schedule shall be submitted to the Division for review and approval to determine compliance with this
17 Rule. The owner or operator shall consider the following factors in determining the schedule of remedial activities:
 - 18 (1) nature and extent of contamination;
 - 19 (2) practical capabilities of remedial technologies in achieving compliance with the approved
20 groundwater protection standards and other objectives of the remedy;
 - 21 (3) availability of treatment or disposal capacity for wastes managed during implementation of the
22 remedy;
 - 23 (4) desirability of utilizing technologies that are not currently available, but which may offer advantages
24 over already available technologies in terms of effectiveness, reliability, safety, or ability to achieve
25 remedial objectives;
 - 26 (5) potential risks to human health and the environment from exposure to contamination prior to
27 completion of the remedy;
 - 28 (6) resource value of the aquifer including:
 - 29 (A) current and future uses;
 - 30 (B) proximity and withdrawal rate of users;
 - 31 (C) groundwater quantity and quality;
 - 32 (D) the potential damage to wildlife, crops, vegetation, and physical structures caused by
33 exposure to contaminants;
 - 34 (E) the hydrogeologic characteristics of the facility and surrounding land;
 - 35 (F) groundwater removal and treatment costs; and
 - 36 (G) the costs and availability of alternative water supplies; and
 - 37 (7) practical capability of the owner or operator.

(e) The Division may determine that active remediation of a release of a 40 CFR 258 Appendix II constituent from a MSWLF unit is not necessary if the owner or operator demonstrates to the Division that:

- (1) the groundwater is 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 reduction in risk to actual or potential receptors; or
- (2) the constituent or constituents are present in groundwater that:
 - (A) is not currently or expected to be a source of drinking water; and
 - (B) is not hydraulically connected with water to which the constituents are migrating or are likely to migrate in concentrations that would exceed the approved groundwater 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 Paragraph (e) of this Rule 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 groundwater, to prevent exposure to groundwater, or to remediate groundwater to concentrations that are technically practicable and reduce threats to human health or the environment.

History Note: Authority G.S. 130A-294;
Eff. October 9, 1993;
Readopted Eff. September 16, ~~2021~~ 2021;
Amended Eff. Pending Legislative Review.

1 15A NCAC 13B .1637 is proposed for amendment as follows:

3 **15A NCAC 13B .1637 IMPLEMENTATION OF THE CORRECTIVE ACTION PROGRAM**

4 (a) Based on the approved schedule for initiation and completion of remedial activities, the owner or operator shall:

5 (1) within 120 days after the approval of the selected remedy or as approved by the Division, submit a
6 corrective action plan that establishes and implements a corrective action groundwater monitoring
7 program that:

8 (A) meets the requirements of an assessment monitoring program under Rule .1634 of this
9 Section;

10 (B) indicates the effectiveness of the corrective action remedy; and

11 (C) demonstrates compliance with groundwater quality standards ~~and interim maximum~~
12 ~~allowable concentrations (IMACs)~~ established in accordance with 15A NCAC 02L .0202
13 or the groundwater protection standards established in accordance with Rule .1634(b) of
14 this Section pursuant to Paragraph (f) of this Rule.

15 (2) implement the approved corrective action remedy; and

16 (3) take any interim measures necessary to ensure the protection of human health and the environment.
17 Interim measures shall be consistent with the objectives of and contribute to the performance of any
18 remedy that may be required. The following factors shall be considered by an owner or operator in
19 determining whether interim measures are necessary:

20 (A) the time required to develop and implement a final remedy;

21 (B) actual or potential exposure of nearby populations or environmental receptors to
22 constituents of concern;

23 (C) actual or potential contamination of drinking water supplies or sensitive ecosystems;

24 (D) further degradation of the groundwater that may occur if remedial action is not initiated;

25 (E) weather conditions that may cause constituents of concern to migrate or be released;

26 (F) risks of fire or explosion, or potential for exposure to constituents of concern resulting from
27 an accident or failure of a container or handling system; and

28 (G) other situations that may pose threats to human health or the environment.

29 (b) The owner or operator shall submit a corrective action evaluation report to the Division in an electronic format
30 that is accessible and viewable by the Division no less than once every five calendar years until the owner or operator
31 are released from the corrective action program in accordance with Paragraph (g) of this Rule. The report shall contain
32 a description of the corrective measure remedies that have been implemented or completed since the initiation of the
33 corrective action program; and an evaluation of the effectiveness of the corrective action program. The owner or
34 operator may request to submit the corrective action evaluation report ~~Corrective Action Evaluation Report~~ to the
35 Division on an alternate schedule. The owner or operator shall submit the request in writing to the Division, and the
36 request shall include a justification for the alternate schedule. In making the determination on approval of the request,
37 the Division shall consider the following factors:

- 1 (1) the schedules for corrective action established in the corrective action plan ~~Corrective Action Plan~~
- 2 and changes to corrective actions;
- 3 (2) the justification submitted by the owner or operator;
- 4 (3) the size, direction, and rate of travel of the contaminant plume;
- 5 (4) the circumstances and use of properties, groundwater, and surface water downgradient of the
- 6 contaminant plume; and
- 7 (5) whether the alternate schedule complies with Article 9 of Chapter 130A of the General Statutes and
- 8 the rules adopted thereunder.

9 (c) The owner or operator or the Division may determine, based on information developed after implementation of
 10 the remedy has begun or other information, that compliance with requirements of Rule .1636(b) of this Section are
 11 not being achieved through the remedy selected. In such cases, the owner or operator shall implement other methods
 12 or techniques to comply with Rule .1636 of this Section unless the Division determines that active remediation is not
 13 necessary in accordance with Rule .1636(e) of this Section.

14 (d) If the owner or operator or the Division determines that compliance with requirements under Rule .1636(b) of this
 15 Section cannot be achieved with any currently available methods, the owner or operator shall:

- 16 (1) submit a written report that documents that compliance with the requirements under Rule .1636(b)
- 17 of this Section cannot be achieved with any currently available methods and gain approval from the
- 18 Division. If required by G.S. 89C or G.S. 89E, a licensed professional engineer or licensed geologist
- 19 shall prepare these documents. [Note: The North Carolina Board of Examiners for Engineers and
- 20 Surveyors and the Board of Licensing of Geologist has determined, via letters dated July 16, 2010
- 21 and November 30, 2010, that preparation of documents pursuant to this Paragraph constitutes
- 22 practicing engineering or geology under G.S. 89C and G.S. 89E.];
- 23 (2) implement alternate measures to control exposure of humans or the environment to residual
- 24 contamination, as necessary to protect human health and the environment; ~~and~~
- 25 (3) implement alternate measures for control of the sources of contamination, or for removal or
- 26 decontamination of equipment, units, devices, or structures that are technically practicable and
- 27 consistent with the overall objective of the remedy; and
- 28 (4) submit a report justifying the alternative measures to the Division for review. The Division shall
- 29 date and stamp the report "approved" if the conditions of this Paragraph are satisfied. The approved
- 30 report shall be placed in the operating record prior to implementing the alternative measures.

31 (e) All solid wastes that are managed pursuant to a remedy required under Rule .1636 of this Section, or an interim
 32 measure required under Paragraph (a) of this Rule, shall be managed in a manner that is protective of human health
 33 and the environment; and that complies with applicable Resource Conservation and Recovery Act requirements.

34 (f) Remedies selected pursuant to Rule .1636 of this Section shall be considered complete when:

- 35 (1) the owner or operator complies with the groundwater quality and groundwater protection standards
- 36 at all points within the plume of contamination that lie beyond the relevant point of compliance;

(2) compliance with the groundwater quality standards ~~and IMACs~~ established in accordance with 15A NCAC 02L .0202 or the groundwater protection standards established in accordance with Rule .1634(b) of this Section has been achieved by demonstrating that concentrations of 40 CFR 258 Appendix II constituents have not exceeded these standards for a period of three consecutive years, consistent with performance standards in Rule .1636(b) of this Section; and

(3) all actions required to complete the remedy have been satisfied.

(g) 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 (f) 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 licensed 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.

(h) When, upon completion of the certification, the Division determines that the corrective action remedy has been completed in accordance with Paragraph (f) of this Rule, the owner or operator shall be released from the requirements for financial assurance for the corrective action program under Rule .1628 of this Section and Section .1800 of this Subchapter. Nothing in this Paragraph shall release the owner or operator from the requirements for financial assurance for closure, post-closure care, or potential assessment and corrective action in accordance with Rule .1628 of this Section and Section .1800 of this Subchapter.

History Note: Authority G.S. 130A-294;
Eff. October 9, 1993;
Amended Eff. April 1, 2011;
Readopted Eff. September 16, ~~2021~~ 2021;
Amended Eff. Pending Legislative Review.